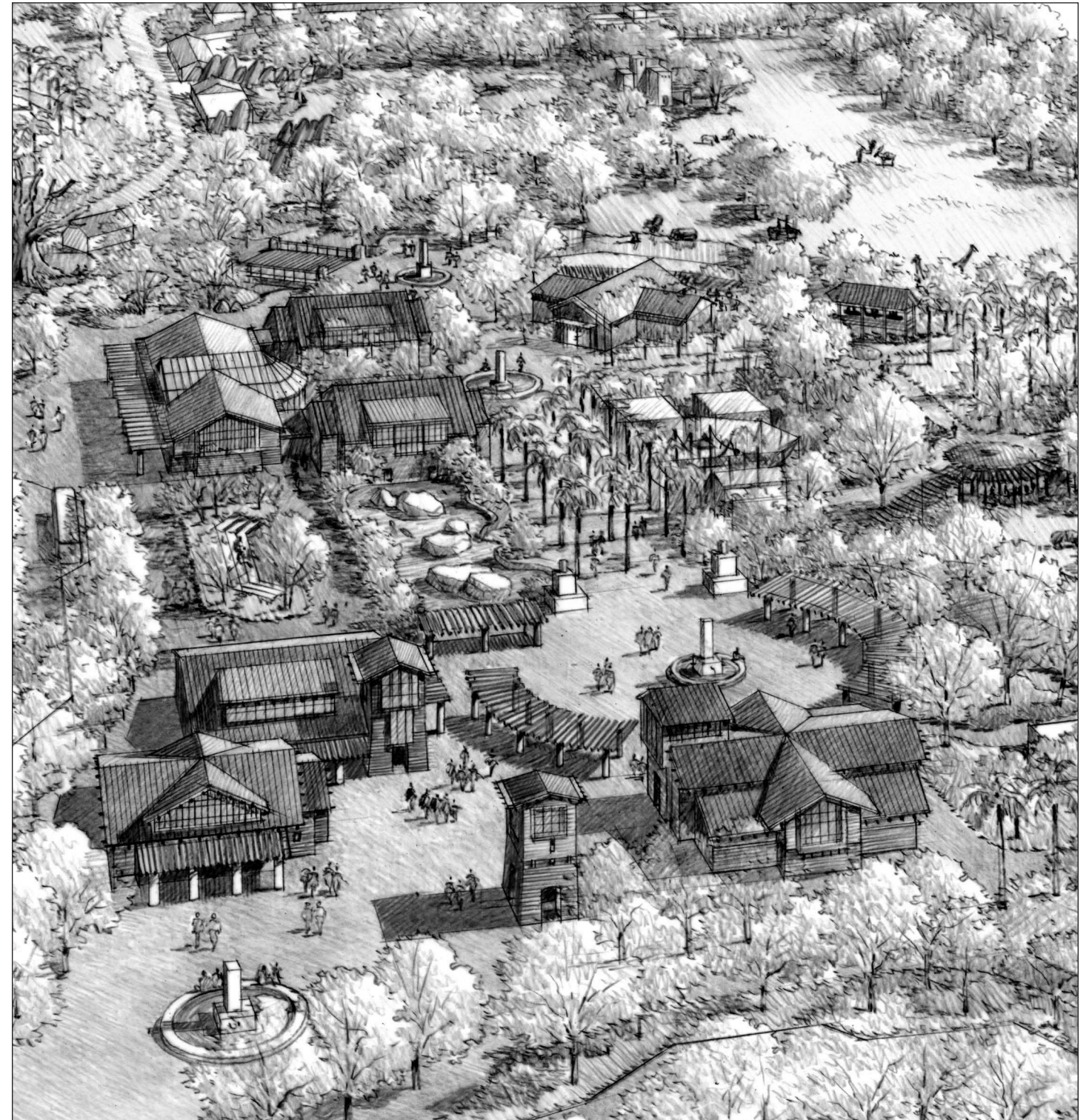


FRESNO CHAFFEE ZOO



FACILITY MASTER PLAN

"The mission of the Fresno Chaffee Zoo is to provide a fun, unique and up-close experience that strengthens the bond between people and wildlife."

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Introduction4
Illustrative Roeding Park Master Plan Revised June 20096
Master Plan Projects Summary7

MASTER PLAN PROJECTS

New Park Boulevard and Golden State Boulevard Entry Gate9
Parking Hub and Storm Water Management10
Zoo Operations and Maintenance Center11
Diversity of Life Pavilion and Education Center12
Grasslands Waterhole Panorama and Waterhole Café & Event Center13
Safari Trail Phase 1 – Predators14
Sea Lion Exhibit and Zoo Promenade15
Asian Panorama Exhibit and Asian Archipelago Expansion16
Entry Village and Administration17
Children’s Zone18
Rainforest Aviaries and Exhibit Pavilion19
Safari Trail Phase 2 – Primates and Plaza Hub20
Main Event Hub and Lakeside Gardens21

CONCEPTUAL FRAMEWORK

Parking and Visitor Flow23
Campus Ecology24

INVENTORY & ANALYSIS

Regional Mapping26
City and Neighborhood Context Mapping27
Roeding Park Organization Existing Site Photos28
Roeding Park Land Use and Analysis Existing Condition29
Roeding Park Circulation Existing Condition30
Roeding Park Vegetation Existing Condition31
Fresno Chaffee Zoo Land Use Existing Condition32
Fresno Chaffee Zoo Site Analysis Existing Condition33

UTILITIES

Infrastructure Analysis Notes35
Proposed Utility Master Plan36
Proposed Water System Capacities37
Proposed Electrical Master Plan38
Proposed Natural Gas Master Plan40

APPENDIX

Zoo Renovations Package – Test Project List43
Conceptual Architecture and Site Imagery44
Measure Z Plan Alternative through 201445
Land Use Quantities46
ALTA/VACSM Land Title Survey47

This document was prepared by the Fresno Chaffee Zoo and their consultants
Bonnie Sevy Koeppel and Dirk Poeschel Land Development Services, Inc. in June, 2009.

EXECUTIVE SUMMARY

Introduction

BACKGROUND

In November of 2004, 73.4% of all Fresno County voters supported the passage of Measure Z. The purpose as detailed in the official ballot description of Measure Z was as follows:

COUNTY OF FRESNO SAVE OUR ZOO, MEASURE Z.

To help ensure survival of the Chaffee Zoo by providing necessary funding to repair and restore the Zoo, bring back large animal exhibits, further revitalize the Zoo, and preserve the Zoo's Species Survival Plan and ongoing Education Program shall Fresno County voters approve a one-tenth of one percent sales tax for ten years with all net proceeds dedicated exclusively to the Chaffee Zoo?

Subsequent to passage of the measure, in July of 2007 the *Fresno Chaffee Zoo Facility Master Plan Draft Final Report* was developed.

The 2007 Facility Master Plan Draft Final Report represented a collaborative effort between several firms and disciplines, and incorporates the input of many individuals from the Fresno Chaffee Zoo (Zoo), the City of Fresno Parks, After School Recreation & Community Services (PARCS), and Rotary Storyland and Playland. The Fresno Chaffee Zoo and PARCS commissioned CLRdesign – architects and landscape architects, Schultz &

Williams, Inc. – strategic planners and Blair Church Flynn (BCF) – consulting engineers to prepare the Master Plan documents for Roeding Park (Park) and the Fresno Chaffee Zoo. Although the planning process for these Master Plans occurred concurrently, both the Park and Zoo Master Plans exist as stand alone reports.

After further evaluation of project objectives in February 2008 the *Fresno Chaffee Zoo Facility Master Plan Final Report* was prepared and presented to the Fresno Chaffee Zoo Board for review and acceptance.

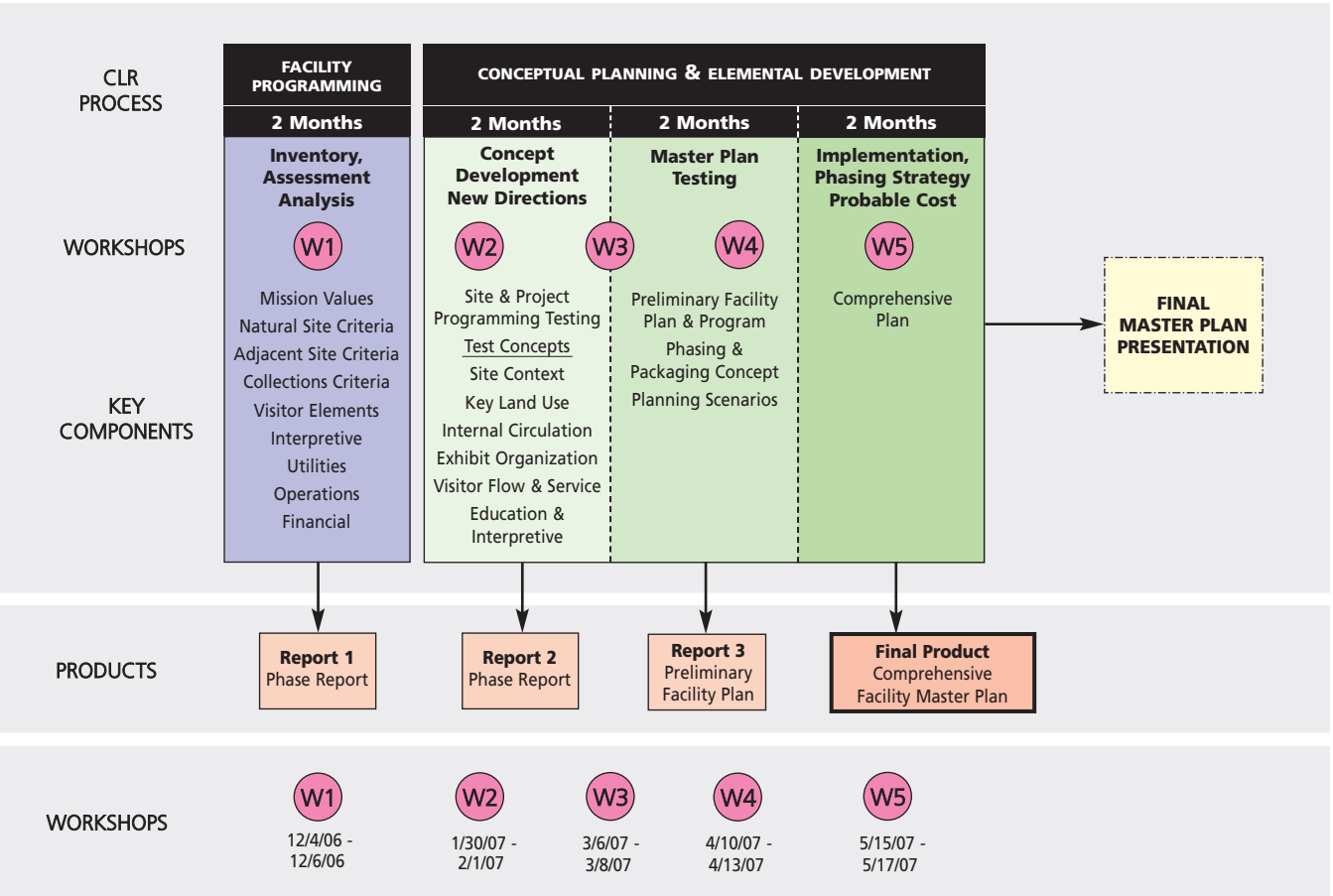
PROCESS

The 2008 version of the Facility Master Plan was used as the primary document to describe the project for submittal and review of the project Conditional Use Permit (CUP) and preparation of the related Environmental Impact Report (EIR). The project EIR identified certain potential issues that could be substantially mitigated by revising the project. Based on meetings with City of Fresno planning staff and project consultants, the Fresno Chaffee Zoo Board revised the project as detailed in this document. This Master Plan represents a collaborative effort to deliver an environmentally sensitive, commercially successful project that provides a unique education and entertainment experience to the region.

Throughout the initial eight-month Planning Process (see graphic diagram below), several new ideas and concepts were generated with the help of the Zoo Planning Team along with many groups and individuals representing the Park including Rotary Storyland and Playland, and the City of Fresno PARCS. During the initial stages of the Planning Process, CLR facilitated workshops with the full Planning Team to discuss key broad issues such as land use, circulation, Park access and city and regional context. During the later stages of the Planning Process, special focused discussions were conducted with the Zoo, Park, Playland and Storyland to discuss site-specific issues and new development concepts.

Inventory, Assessment & Analysis

During the first phase of the Planning Process, CLR and BCF collected as much relevant site data as possible. Maps were prepared to document existing patterns of circulation, site access and parking, land use, land form, visitor services, visitor experiences, operations facilities, exhibits and attractions, vegetation and utilities. These maps were then used to identify the positive and negative attributes of the site.



Planning Process Diagram



Neighborhood Context Map

Concept Development

Utilizing the collected site inventory data and conclusions reached during the first phase of the Planning Process, several new land use and circulation concepts were developed that incorporated the 21 acre Zoo expansion. Creating a simplified vehicular and pedestrian circulation system throughout the Park and Zoo, with an expanded main parking hub, was a key driver in the spatial organization of the Master Plan. Preliminary land use concepts were also generated during this phase that proposed new areas for recreation and green space for the Park, and new exhibits, attractions, strategic services, and operations facilities for the Zoo.

Master Plan Testing - Test Concepts

All illustrations of the Facility Master Plan were presented for review, comment and revision during this phase of the process. Preliminary phasing and project packaging concepts were developed to test various implementation and strategic return on investment scenarios and may change due to a variety of circumstances.

Implementation

During this final phase of the design process, this Facility Master Plan was prepared, which provides a road map for how the Plan can be carried out through a prioritized sequence of project implementation. For the Park, including Rotary Storyland and Playland, the Master Plan provides a flexible framework for both improvements and growth. The Zoo Master Plan proposes a comprehensive redevelopment and expansion strategy through year 2020, with a strong focus on the "Measure Z" implementation plan through year 2014.

MASTER PLAN OBJECTIVES

"Measure Z" will provide the Zoo with a projected total of \$100M through 2014. Approximately \$33M of Measure Z funding is dedicated towards supporting Zoo operations, while \$67M is available for capital projects. Measure Z established a public commitment to expand and enhance the Fresno Chaffee Zoo. The current location represents a historic and socially important component of the community that could not be replaced given the substantial investment in the existing site. The lease agreement with the City of Fresno is recognition of the Zoo's value as an asset to the community and the city's way of assuring the facility is operated in accordance with appropriate standards. Historic expansions of the Zoo onto Park land have occurred as new Zoo opportunities made such expansions appropriate. Given these facts, the Zoo strives to achieve the following project goals:

1. Provide a comprehensive roadmap for future development of the Fresno Chaffee Zoo consistent with the objectives of Measure Z.
2. Expand and enhance the Fresno Chaffee Zoo utilizing Measure Z funding in a manner consistent with the objectives of Measure Z.
3. Phase and implement the expansion and enhancement of the Zoo in a timeframe consistent with that contemplated under Measure Z.
4. Expand and enhance the Zoo to meet established Association of Zoos and Aquariums (AZA) standards.
5. Maintain the Zoo, in expanded and enhanced form, in and around its existing location in the southern portion of the Park.
6. To the extent practical, respect the integrity of the existing Zoo horticultural and architectural theme.

MASTER PLAN DRIVERS (GOALS)

Circulation

- Eliminate redundant Park and Zoo roads and paths to maximize habitat land use.
- Develop a more organized and simplified visitor circulation/wayfinding system.
- Provide better visitor amenities with plenty of options for cooling & shade.
- Create a dedicated Zoo service perimeter access road to minimize sharing of visitor roads.

Land Use

- Redevelop the 39 acre Zoo campus over time to maximize exhibit/animal land use.
- Preserve existing valuable trees wherever possible and develop a reforestation plan.
- Improve existing botanical displays and create an organized campus horticulture plan.

Arrival and Entry

- Create a centralized parking hub for the Park and the Zoo that can handle peak days.
- Drastically improve vehicular and pedestrian circulation throughout the Park.
- Create a distinct, memorable gateway experience when entering the Park.
- Reconstruct the Zoo entry sequence to be user-friendly and easy.

Visitor Amenities

- Improve amenities including shade, benches, picnic and play areas, and restrooms.
- Improve visitor services including main gift shop, café, snack/vending and stroller rental.
- Guest services, ticketing and memberships need improving.

Exhibits and Attractions

- Strive for doubling the existing exhibit area land use (existing at 22%).
- Create habitat zones that allow for clear viewing, up-close views and multi-species views.
- Test developing larger, more flexible habitat zones to maximize management options.
- Need more/better revenue generators: rides, shows, event facilities, etc.

Collection Plan and Animal Health

- Develop a Zoo exhibit organization model that doesn't "box in the collection plan".
- Add more active, vocal and charismatic species to the collection plan.
- New/expanded vet hospital, quarantine, and propagation facilities are required .

Mission Drivers

- Develop new facilities, habitats, interpretive packages, and programming to showcase the Zoo's efforts in animal conservation, science and education.
- Become a destination attraction and create memorable, whole family experiences and special encounters.
- Re-build and manage the Zoo campus overtime to become more sustainable and educate visitors and staff about conservation and the environment.

ZOO PLANNING TRENDS

Audiences have become more and more sophisticated and have higher expectations with much more competition for their dollars. Zoos have and always will have a unique product like no other. While the products may vary between a Zoo and a theme park or even a sporting event, it is imperative that the Zoo revise the overall business model to keep pace with the expectations of the visitor experience. Our audiences are increasingly sophisticated and have experienced other entertainment venues making expectations rise. The following trends we feel are critical.

The Entry

We have had success in implementing strategies for making our entry experiences comfortable, easy and rewarding with animals up front, bright inviting retail shops, easy to obtain memberships and a “feel good” start to the visitor experience.

Adventure Education

We are not in the business of being a traditional school or classroom, however, we do arguably have one of the most dynamic classrooms of any in the form of our “living natural world of flora and fauna” that comprises a Zoo. Couple that with a tremendous audience outreach and we can impact many lives and support a worldwide mission of conservation. We call it adventure because we advocate promoting a hands-on living laboratory in the Zoo or linked to exhibit buildings and complexes where children and families are having fun exploring rainforests, interacting with animals, or just plain getting their hands "dirty" with meaningful projects.

Panoramic Lunches

We believe strongly in a key location for having a great lunch overlooking an animal habitat - where else but a Zoo or safari can one experience this? This goes to the bottom line of great fun and a prime revenue generator.

Flex Activity-based Design

Flex design looks to create flexible exhibits that can be utilized in varying combinations for the same or multiple species along with multi-option animal management strategies so that we can provide animals, staff, and visitors with an array of enriching experiences in more predictable ways.

Although every effort was made to accurately provide details regarding habitat species, habitat species may be substituted due to a variety of factors that affect the ability to obtain such species such as population, supply, health considerations, demand or other considerations.

As part of the shared Master Plan expenses, the Zoo intends to provide the design and construction standards for the Zoo and other major area components to assure compatibility with the project objectives, enhance efficiency and achieve optimum visitor enjoyment.

PHASING PLAN FOR MEASURE Z PROJECTS

YEAR	MEASURE Z - MASTER PLAN PROJECT
2012	Grasslands Exhibit Waterhole Café & Event Center Zoo Operations & Maintenance Yard
2013	Sea Lion Exhibit Predators Exhibit
2014	Children's Zone
2015*	Diversity of Life Pavilion Education Center
*Providing Funding Remains from Measure Z	

Illustrative Roeding Park Master Plan

Revised June 2009



Master Plan Projects Summary

BACKGROUND

The City of Fresno and the Zoo are committed to facilitating the orderly and efficient development and expansion of the Zoo. Some improvements will mutually benefit the Park and the Zoo and will be shared between the two entities. Further details about financing, construction scheduling and design must be developed. As part of the shared expenses, the Zoo intends to provide the design and construction standards for the Zoo and other major area components to assure consistency with the Park and Zoo project objectives enhance efficiency and achieve optimum visitor enjoyment.

Funding for Zoo improvements will come from Measure Z, grants and sponsorships. Phasing of new construction will occur as funding, design and permitting is accomplished with a priority to complete the Measure Z improvements. To the extent practical, improvements will maintain the integrity of the Park's architectural and horticultural theme.

"MEASURE Z" PARK/ZOO SHARED INFRASTRUCTURE PROJECTS

Golden State Boulevard Entry Gate

New main visitor gate off of Golden State Boulevard to create a unique and more direct Park & Zoo entry experience.

PROJECTED OPENING: A first phase priority improvement to be coordinated with the Zoo construction schedule.

New Park Boulevard

Redeveloped main Park Boulevard with special signage, graphics, sculpture, landscape, lighting and pond relocation.

PROJECTED OPENING: A first phase priority improvement to be coordinated with the Zoo construction schedule.

Parking Hub

Expand centralized visitor parking area for shared Park and Zoo parking spaces.

PROJECTED OPENING: A first phase priority improvement to be coordinated with the Zoo construction schedule.

Relocated Park Maintenance Yard

Move the Park maintenance yard to the planned location at the north-west corner of the Park.

PROJECTED OPENING: A first phase priority improvement to be coordinated with the Zoo construction schedule.

Construct New Storm Water Storage Facility

Construct an off-site storm water storage basin. Uncouple the existing storm water system from the City of Fresno municipal sewage collection system.

PROJECTED OPENING: To be coordinated with the Zoo construction schedule and per the project engineer's recommendations.

Install New Water, Sewer, Gas and Electricity Services to the Park

Replace dilapidated infrastructure and construct new infrastructure where necessary.

PROJECTED OPENING: A first phase priority improvement to be coordinated with the Zoo construction schedule and per the project engineer's recommendations.

INDEPENDENT ZOO PROJECTS

The following summary of improvements is planned for the Zoo.

Grasslands Exhibit, Waterhole Cafe & Event Center, Zoo Operations & Maintenance Yard.

PROJECTED OPENING: 2012.

Sea Lion Exhibit & Predators Exhibit

PROJECTED OPENING: 2013.

Children's' Zone

PROJECTED OPENING: 2014.

Zoo Renovations Package

PROJECTED OPENING: As can be accomplished and when funds are available.

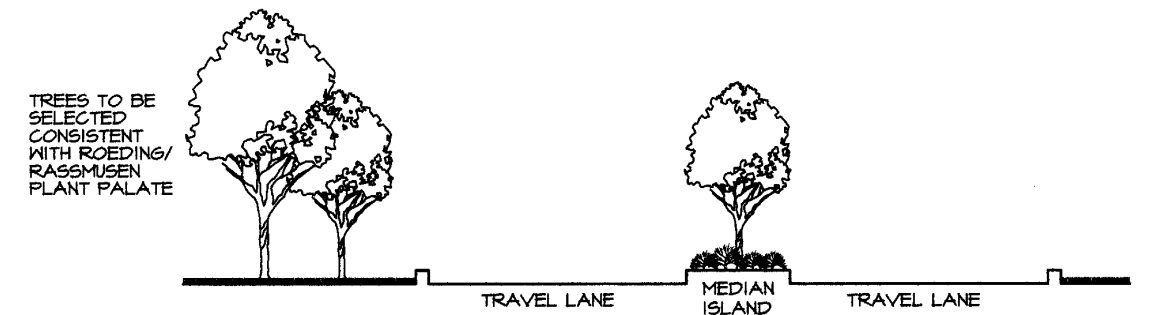
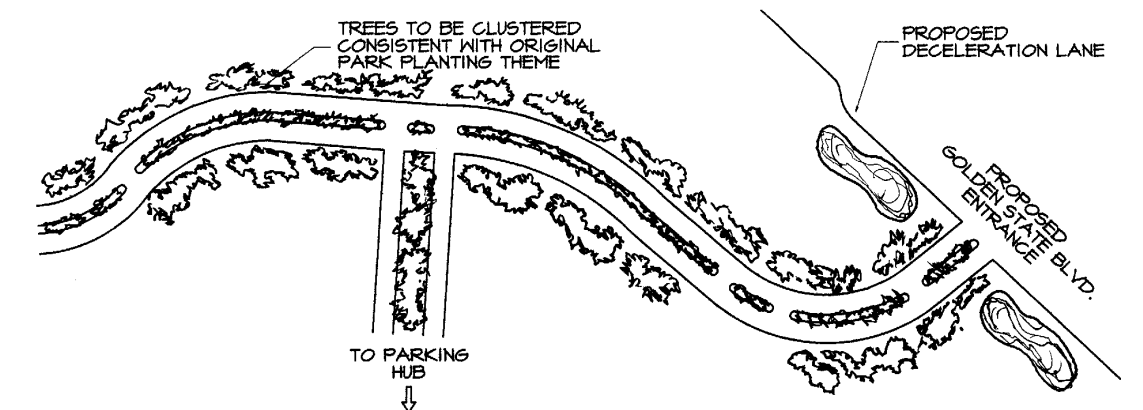
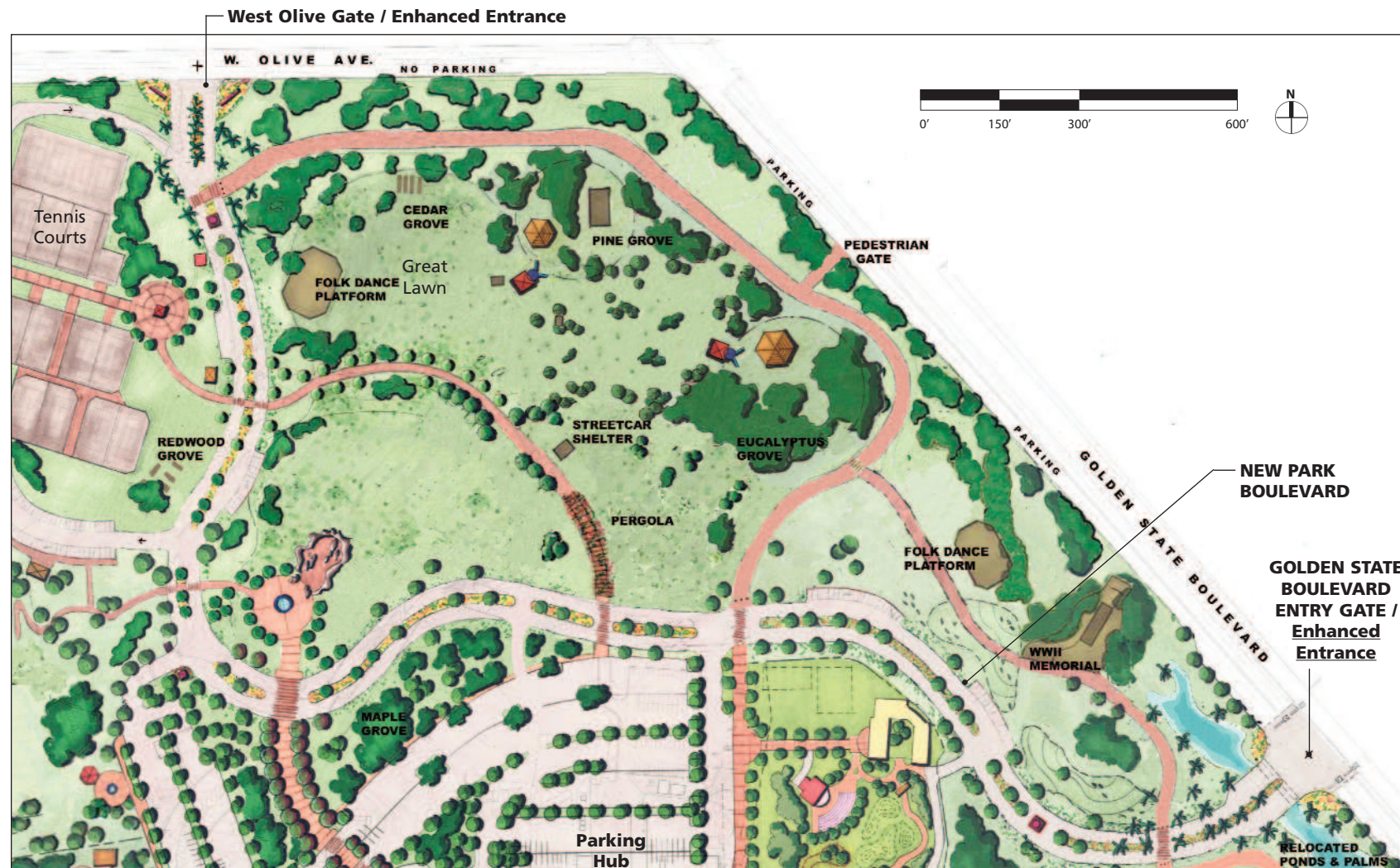
Diversity of Life & Education Center

PROJECTED OPENING: 2015 provided funding remains for Measure Z.

Should Measure Z not be reaffirmed, the Zoo would continue to seek funding from various sources to finance Zoo improvements and operations with further major capital improvements to the project unlikely.

MASTER PLAN PROJECTS

New Park Boulevard and Golden State Boulevard Entry Gate



MAJOR STREETS LANDSCAPE PLANTING CONCEPT

NOT TO SCALE:
05-14-09

NEW PARK BOULEVARD TEST CONCEPTS

- Redeveloped Park Boulevard to serve as the primary vehicular corridor through the Park, providing direct access to the central parking hub, drop-off zones for the Zoo and Playland/Storyland and multiple parking nodes stationed at key Park activity zones.
- The Boulevard is proposed to reuse existing Park road infrastructure wherever possible to minimize costs and reduce the amount of landscape/tree disturbance.
- A generous right of way is proposed that would allow for parallel parking along the shoulders (where possible), a planted ~15' wide median and tree lined edges planted in clusters generally utilizing trees species originally planted at the Park.
- Main access points would occur from the proposed Golden State Boulevard entry gate and the existing West Olive Avenue entry gate. Pedestrian access could still occur at the existing entrance on Belmont Avenue and at a proposed pedestrian gate on Golden State Boulevard.

- The Park ponds may be relocated in phases for the development of animal exhibits and to enhance the proposed entry on Golden State Boulevard. Relocated ponds will be reconstructed in a manner and style consistent with the historic character of the project and to provide interpretative reference to the historic location of the ponds in the project. Water features of the animal exhibits and reconstructed ponds can be used to achieve a no net loss of pond area.

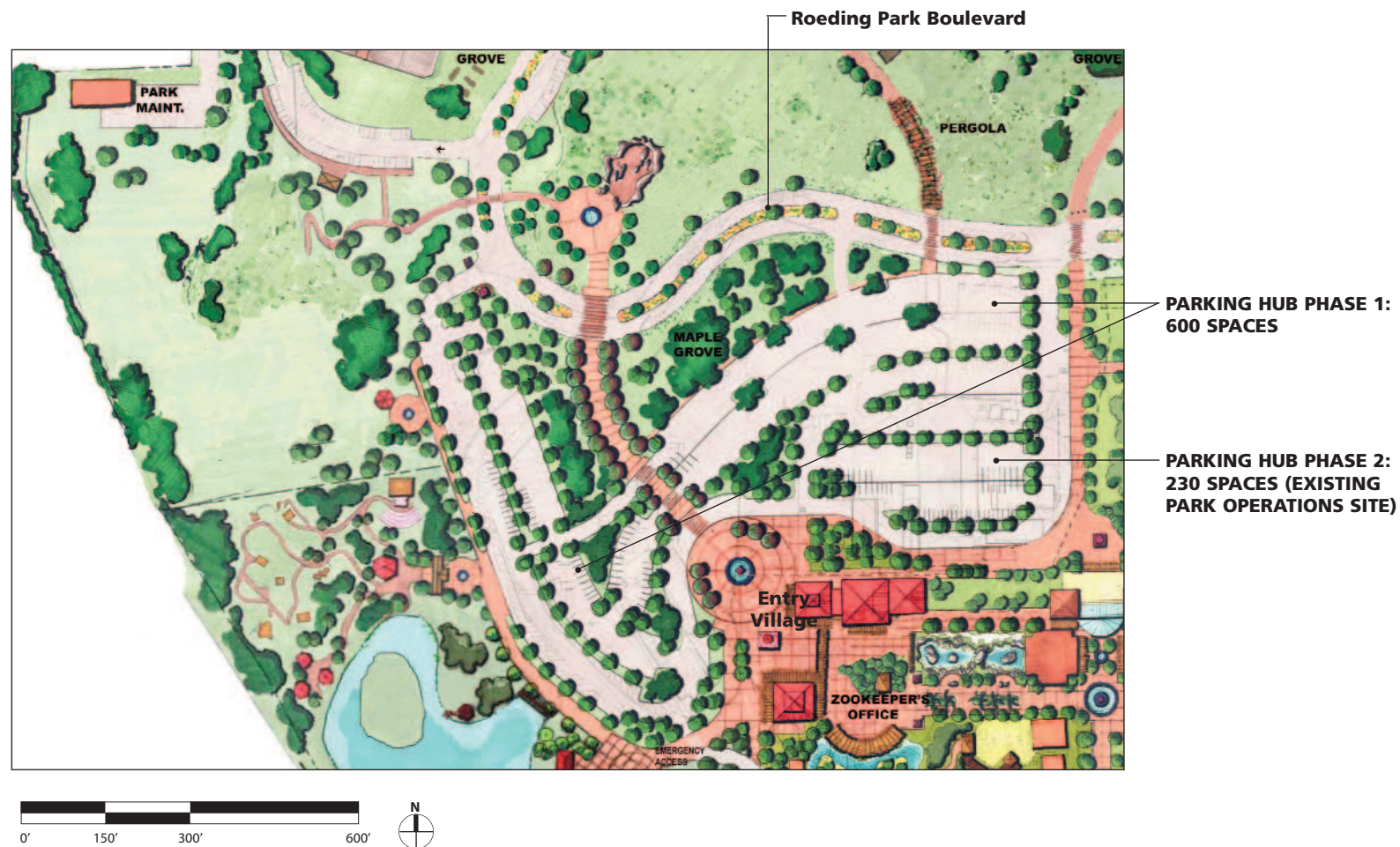
GOLDEN STATE BOULEVARD ENTRY GATE TEST CONCEPTS

- New grand Park & Zoo entry gate off of Golden State Boulevard.
- New entry signage, graphics and a scrolling marquee/gateway sign that would announce special events and happenings at the Park, Zoo and Playland/Storyland.
- Special themed landscape (landform berms, special planting, sculpture, etc.) that would be unique and distinguish the Park from Woodward Park and other nearby recreation sites.



Animal sculpture could be included at the Park entry gates and along the boulevard to create a unique park experience.

Parking Hub and Storm Water Management



STORM WATER DRAINAGE

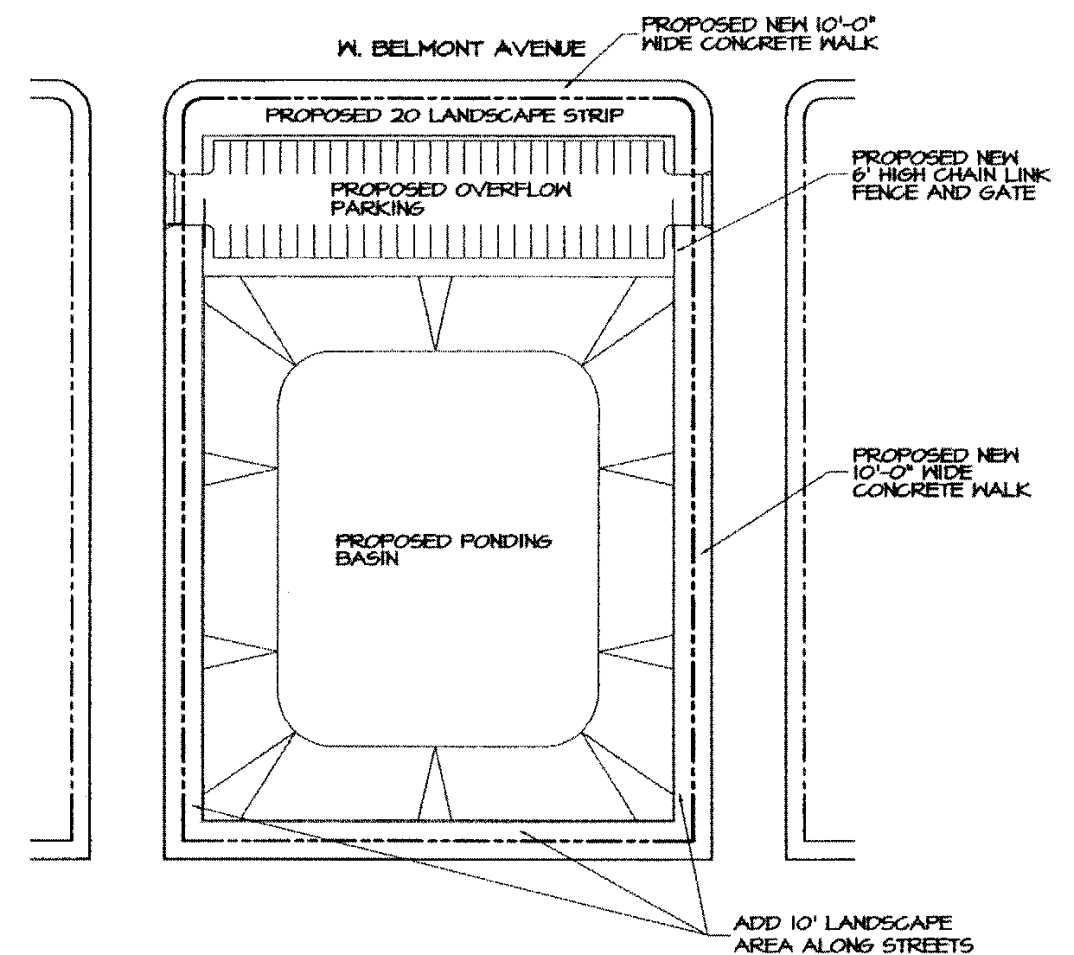
The Zoo Facility Master Plan Final Report contemplated a joint use of parking in the planned on-site storm water retention basin to be located generally in the northwest corner of the project.

The project environmental review process suggested that potential impacts to landscape, historical and open space resources could be substantially reduced by moving the planned storm water retention basin to an off-site location. A preliminary examination of the cost to relocate the project storm water drainage basin was performed by Michael E. Flynn, principal civil engineer with Blair, Church & Flynn Consulting Engineers of Clovis. Based on the cost estimates of the Facility Master Plan, relocating the basin south of Belmont Avenue would save from \$1,300,000.00 to \$1,700,000.00.

Mr. Flynn estimates this savings is for construction cost only and does not include the cost associated with the operation and maintenance of the pump station which could be performed by the Fresno Metropolitan Flood Control District. Nonetheless, Mr. Flynn concluded there would be substantial savings involved by moving the basin off-site including the cost of acquiring the land, reduced grading and the elimination of a lift station to pump storm water to the planned basin.

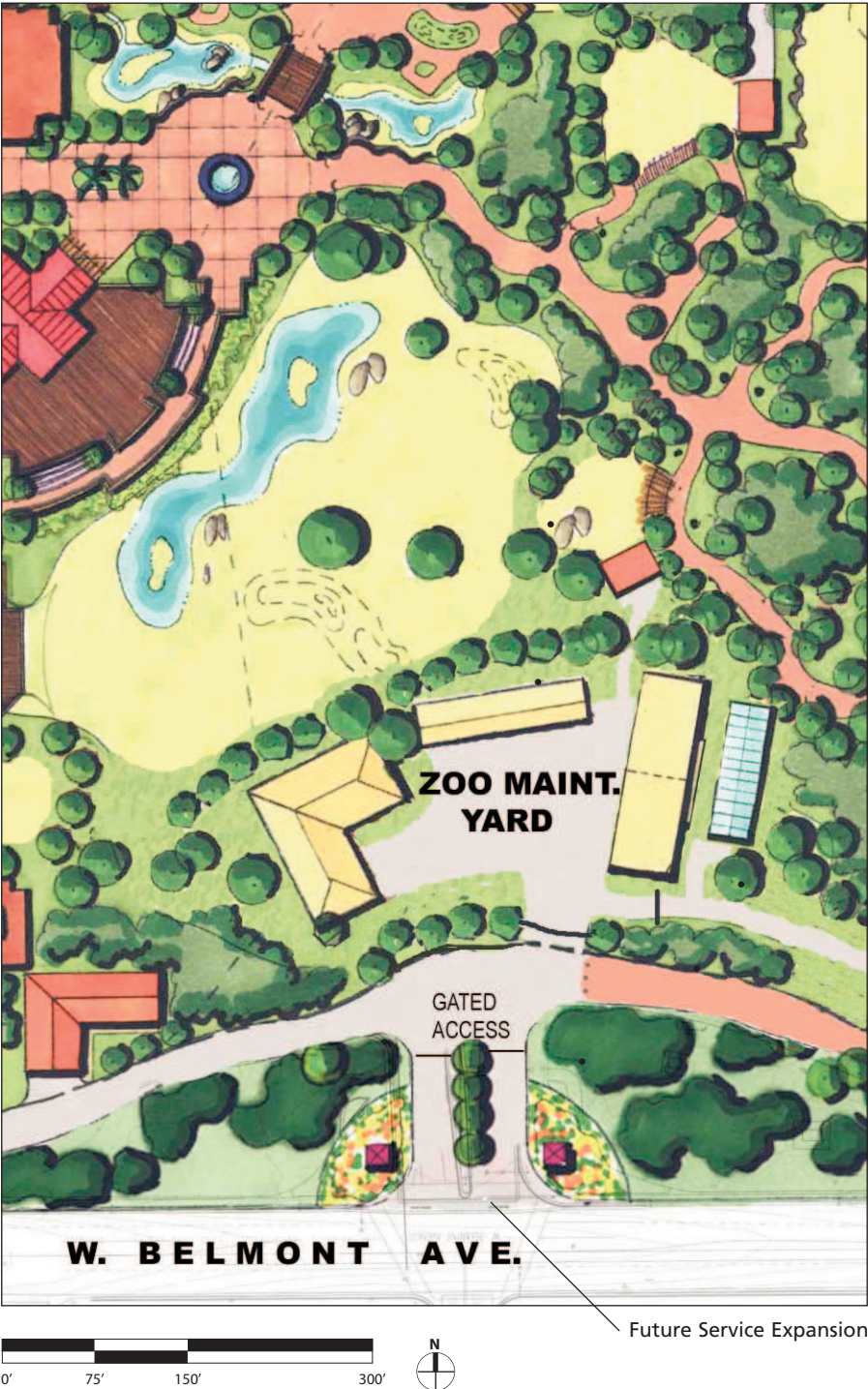
PARKING HUB TEST CONCEPTS

- Centralized shared parking hub for up to 830 parking spaces (includes use of the existing Park Operations site).
- Pave over existing parking zones wherever possible to minimize site disturbance.
- Save existing trees wherever possible by creating vegetated pockets within the parking zones. The existing grove to the northeast of the Operations Site should be retained.
- Low Impact Development (LID) strategies should be considered to manage storm water on-site as much as possible. Some LID strategies include porous paving, bio-swales (vegetated swales), rain gardens, infiltration trenches.
- Promenades and paths that provide easy and comfortable access to the Zoo, Park and Playland/Storyland.



CONCEPTUAL PONDING BASIN DESIGN

Zoo Operations and Maintenance Center



TEST CONCEPTS

- Horticulture support facilities including greenhouses, nursery/barn and material storage.
- Maintenance and Operations support facilities including equipment storage barn(s), equipment and staging yards, material storage, restrooms, offices, and some parking.
- Animal Health complex zones for a new quarantine facility to the south and a propagation facility to the north.
- New Commissary facility with easy delivery access.

SECURITY

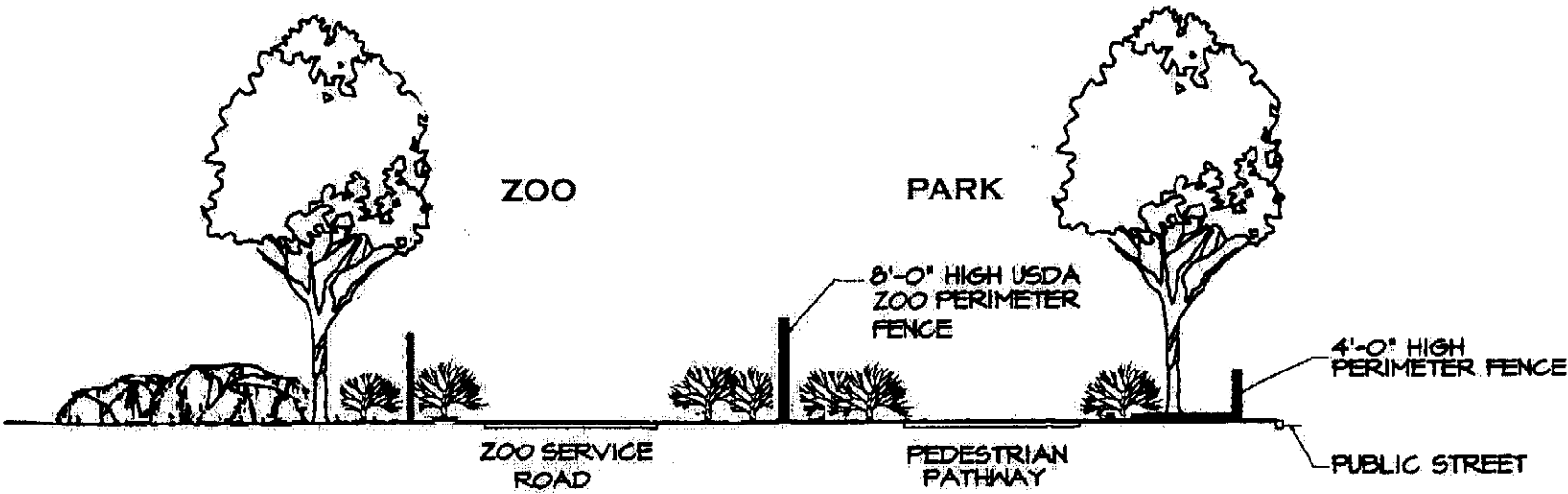
Security of the animals, exhibits and resources of the Zoo are of critical importance as is the security and safety of the project visitors. The Zoo is accredited with the Association of Zoos and Aquariums (AZA) through March 2011. AZA accreditation is official recognition and approval by the AZA Accreditation Commission that a Zoo complies with all policies, standards and procedures of the AZA. The Accreditation Commission evaluates member Zoos or aquariums to make sure they meet AZA standards for many items including, but not limited to animal management and care, the veterinary program and safety policies and procedures. AZA accreditation is repeated every five years. Fewer than 10% of the approximately 2,400 animal exhibitors licensed by the US Department of Agriculture are AZA accredited.

The Zoo will comply with all applicable AZA, Animal Welfare Act (AWA) and related USDA standards, policies and procedures. When implemented by accredited Zoos, these standards, policies and procedures have proven to be effective in providing a safe, healthy and enjoyable visiting experience for AZA member Zoo visitors while providing a healthy and dignified environment for the animals.

Emergency protocols have been established to address a range of potential situations that may occur at a public facility such as the Park, the Zoo and Storyland/Playland.



The existing maintenance & operations site is currently located at the center of the existing 18-acre Zoo. A larger and more accessible site is proposed along the Zoo's southern edge closer to the W. Belmont Avenue entrance.



SERVICE ROAD/SECURITY FENCING
ILLUSTRATION

NOT TO SCALE.

Diversity of Life Pavilion and Education Center



Adventure Activities: Link fun and exciting learning and exploring activities to education programming.

TEST CONCEPTS

- New education programming hub with classrooms and offices linked to an indoor Exhibit Pavilion complex.
- Unique classrooms pavilions, exhibits, play elements, science labs and other “adventure education” elements.
- This new facility could be the anchor attraction at the north end of the Promenade (north-south) linked to the proposed Diversity of Life Exhibit Pavilion(s).
- Test location allows for easy school group drop-off with parking close by.
- A new education biome could be used for special events.
- A shaded courtyard space with indoor/outdoor exhibits, fountains, trellises and other visitor amenities could serve as the main forecourt entry for daily Zoo visitors.
- Diversity of Life Pavilion could include indoor and outdoor panoramic *ecosystem habitats*, such as:
 - Deserts:** Sonoran, Namibian
 - Cloud Forests:** Monteverde, Costa Rica
 - Aquatic:** Coral Reef, Rocky Shores-Penguins, Alcids, Fresh/Saltwater Fish



Classrooms: Space for learning activities could be a resource for the entire region.

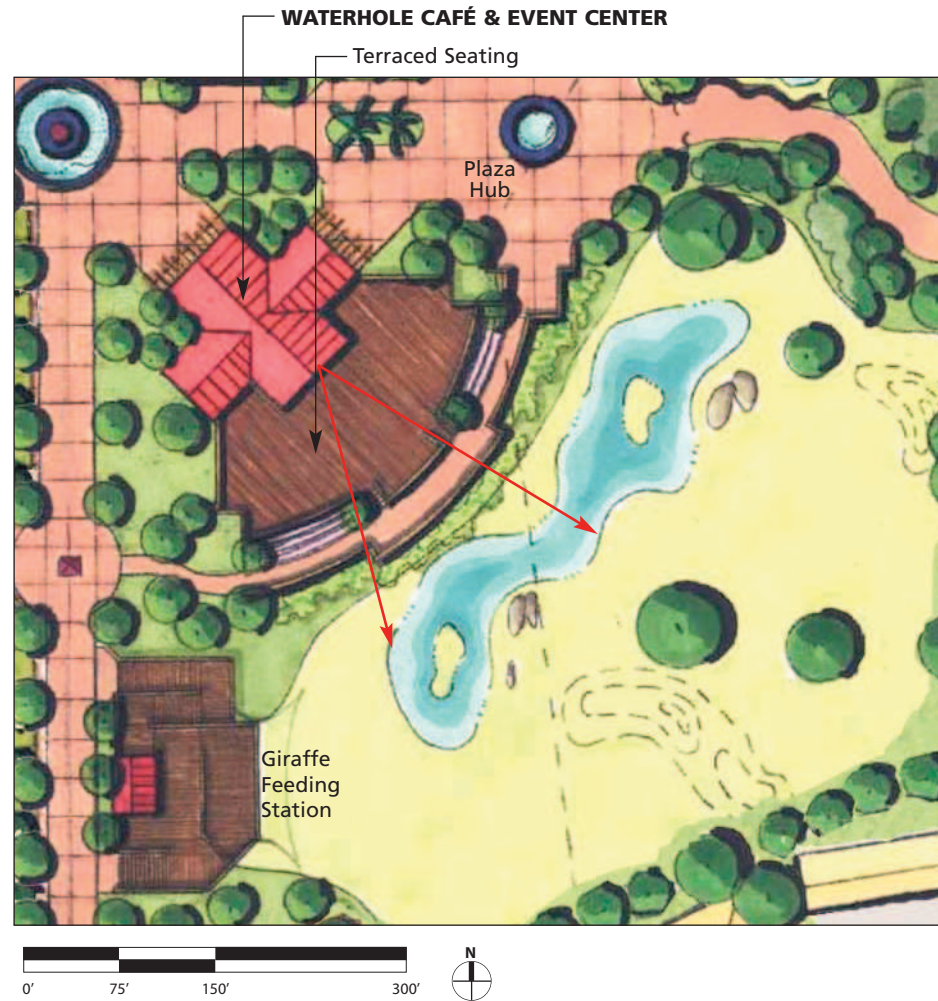


Classroom Biome Hub: The Zoo has the unique opportunity to link adventure, conservation and science to education programming. The new Education Center classrooms could be linked to an exhibit pavilion that is shared by students and daily Zoo visitors.



Ecosystems Panoramas: New indoor and outdoor panoramic ecosystem habitats could be the focus of the first Exhibit Pavilion linked to the Education Center.

Grasslands Waterhole Panorama and Waterhole Café & Event Center



TEST CONCEPTS

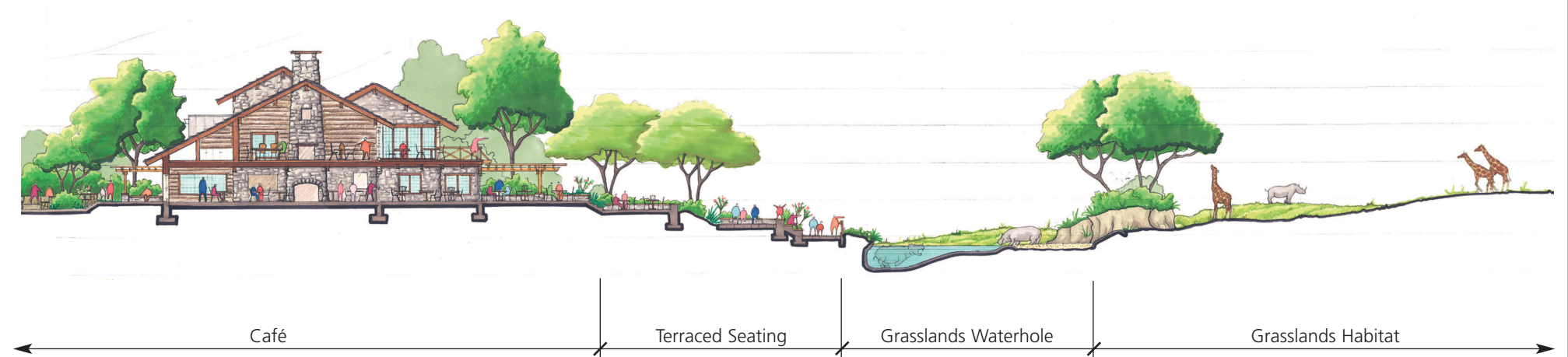
- Café Hub located east of the existing Zoo – the center of the new 39 acre expanded Zoo.
- Festive plaza hub with café, retail and panoramic exhibit views.
- Main Zoo Café with 250-300 indoor seating capacity and a separate Event Center.
- Large centralized multi-species grasslands habitat with spontaneous animal encounters and demonstrations.
- Shaded terraced seating along promenade edges with long panoramic, layered habitat views.



Grasslands & Waterhole: Larger flexible habitat zones that could include large group herds including giraffe, zebra, antelope, pachyderms and more.



Café Panorama: Central Café concept overlooking the proposed large multi-species Grasslands habitat.



Grasslands Waterhole Panorama & Central Café Section - African National Park Lodge

Safari Trail Phase 1 – Predators



Proposed Safari Village

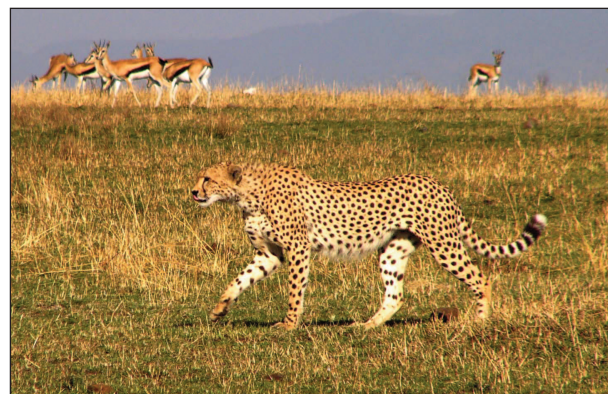


TEST CONCEPTS

- Develop a new anchor attraction and habitat zone located within the proposed Zoo expansion area.
- Habitat zone that could include multiple flex habitats within a kopje formation for big and small cats, wild dogs, hyena, birds and more.
- Potential for animal transfers into proposed grasslands habitat zone near Café for special demos.
- “Wild” safari look & feel along the shaded exhibit trail beginning from the proposed Central Plaza Hub.
- The Safari Trail zone could have a more wild/immersive look and feel compared to the formal promenades and exhibit “gardens” proposed at the existing Zoo.



Overlapping Panoramas & Flex Habitats: Layered panoramas could be achieved by creating seamless connections between the proposed grasslands habitats and predator zones. These habitats could be built flexible enough, and managed in a way to allow for predator-prey rotations that could help enrich the animals’ environment.



Cheetah

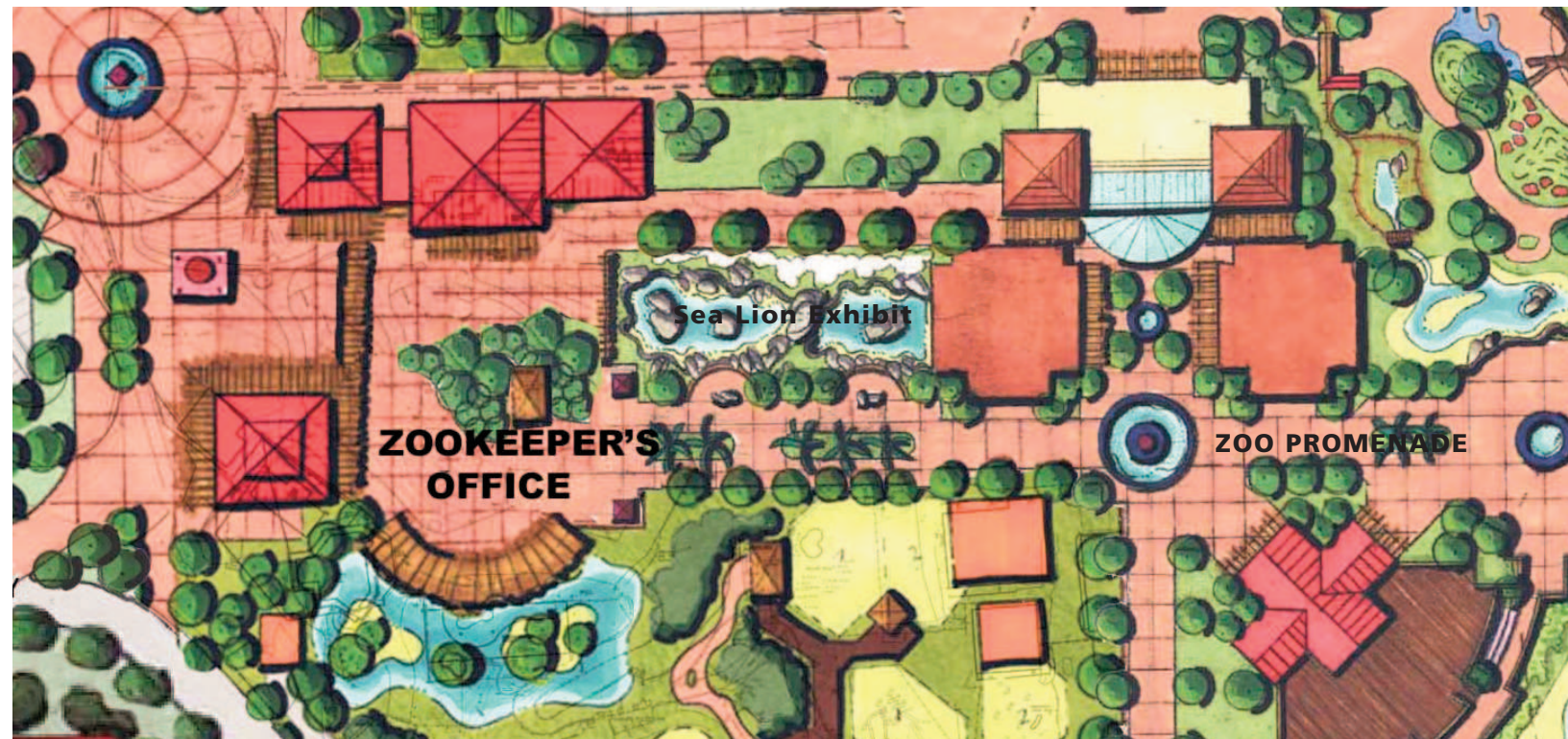


Wild Dog



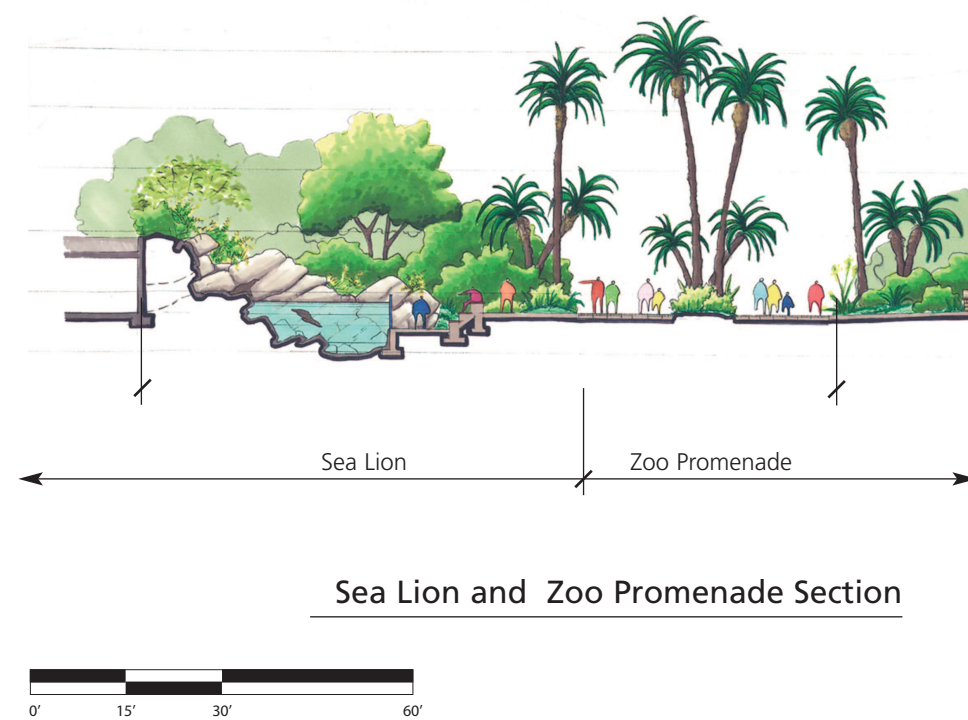
Lion Kopje: The new Safari Trail Predator Zone could include multiple flex habitats within a kopje formation for big and small cats, wild dogs, hyena, birds and more.

Sea Lion Exhibit and Zoo Promenade



SEA LION TEST CONCEPTS

- New outdoor sea lion exhibit sequence located adjacent to the proposed Zoo Entry Plaza.
- Provide active, vocal, charismatic species as first experience for Zoo visitors.
- Other aquatic exhibits could include birds, fish, otters and more.
- Part of this project program would include development of the new Zoo Promenade that links the Entry Village with the Central Café Plaza and Safari Trail sequence beyond.

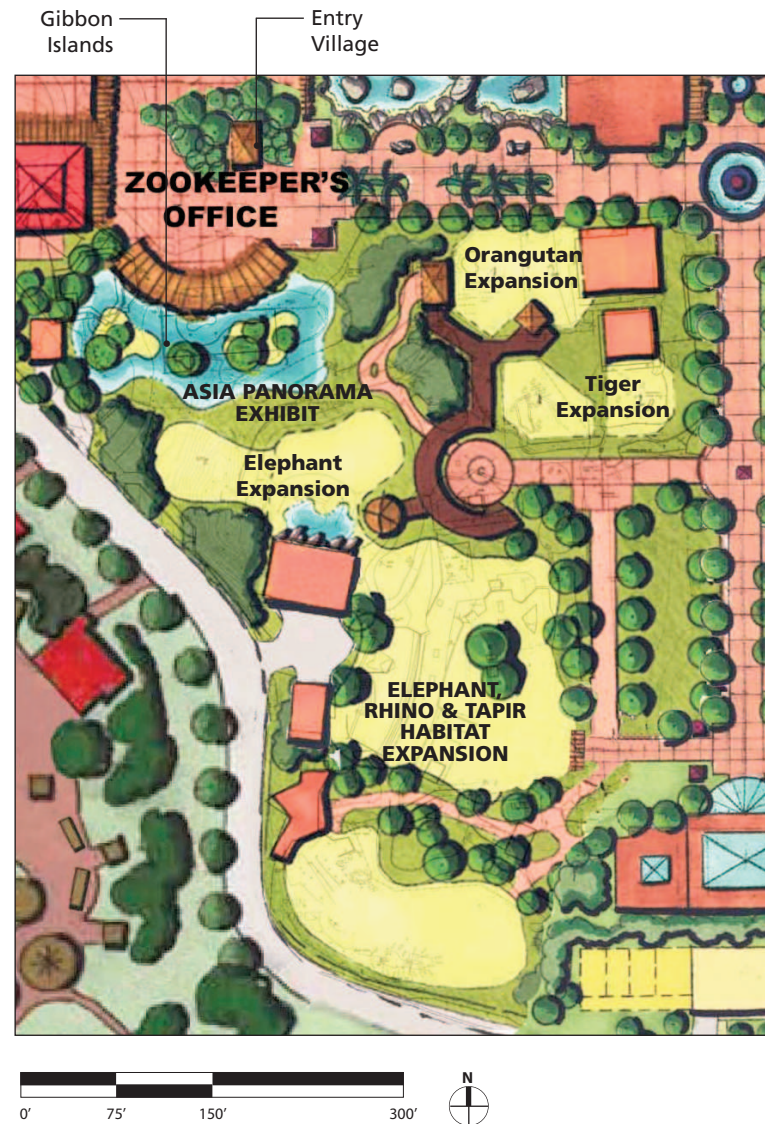


Sea Lion



Brown Pelican

Asian Panorama Exhibit and Asian Archipelago Expansion



TEST CONCEPTS

- Major expansion to the existing Asian elephant habitat (3x larger) by utilizing the undeveloped land to the south and west.
- The expanded elephant habitat concept includes tapir and Indian rhino exhibits, built flexible enough to allow for all three species to rotate/share multiple habitat zones.
- Expansion of the existing orangutan and tiger habitats (2x larger) and visitor sequence.
- Indian Rhino, Sun Bears, Komodo, Birds, and others could be located in this zone.
- Potential habitat linkages to proposed large Grasslands & Waterhole zone.
- Special elephant transfer-crossing demos.
- New pachyderm management facility to handle target elephant population of up to 3 cows and 1 bull, tapirs and rhinos (existing elephant barn to remain).



Tiger



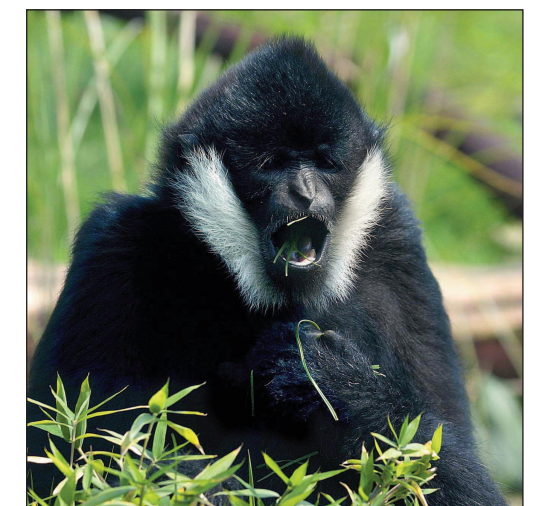
Tapir



Asian Elephant

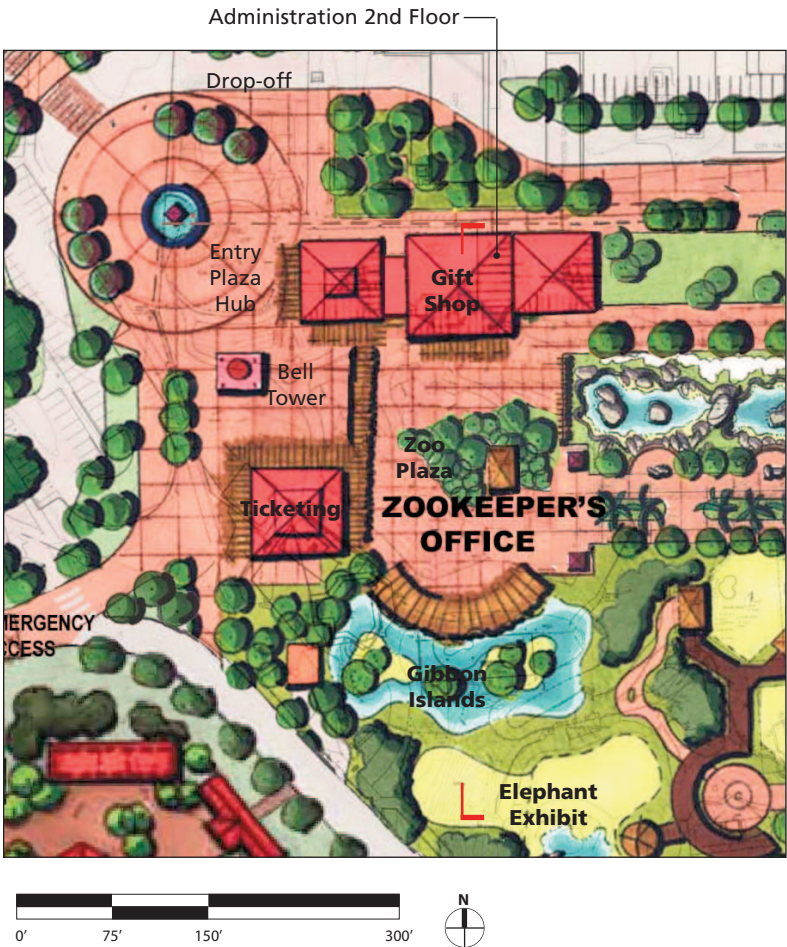


Orangutan



Gibbon

Entry Village and Administration



ENTRY VILLAGE TEST CONCEPTS

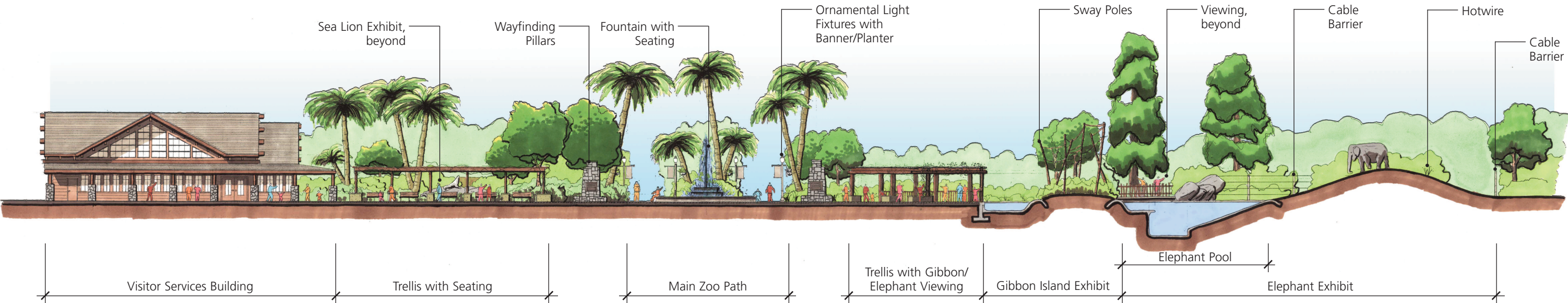
- Large centralized entry plaza (public side of Zoo gate) providing direct access to the Zoo and Playland/Storyland via a new promenade.
- Consistent with the existing site architecture, an appropriate architecture theme will be used for plazas, buildings and furnishings. Animal exhibits and other theme related project components will be determined by the respective design experts and subject to Fresno Chaffee Zoo Board approval.
- Zoo entry facilities including retail (test on the public side of the Zoo gate), ticketing, guest services, coffee/bakery, etc.
- Shade trellises, fountains, sculpture, colorful signage/graphics/banners, lighting, etc.
- Clock/bell tower, flags, or other vertical elements to direct visitors to entry.
- Entry transparency with views of the entry exhibit panorama and gardens.
- Entry exhibit panorama featuring an active, colorful, and vocal species (Gibbon islands could be an option).
- Future elephant expansion to the west could provide a dramatic overlapping entry panorama.
- New Zoo Administration on second floor of main retail building.



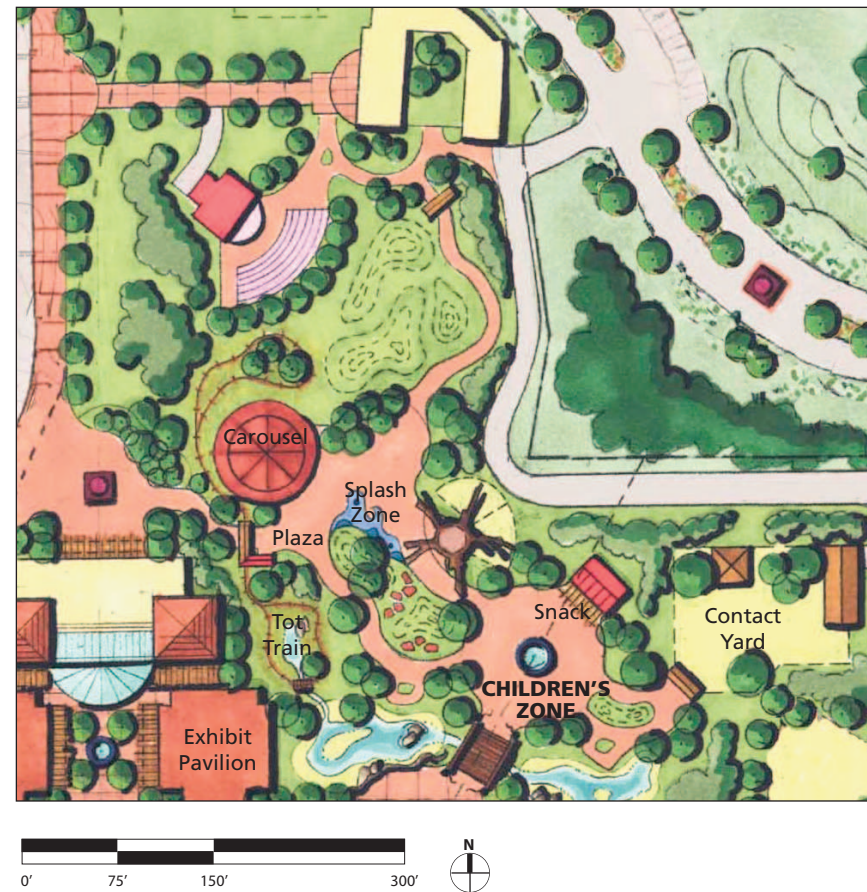
Conceptual Entry Plaza

ADMINISTRATION TEST CONCEPTS

- Dedicated Zoo "Business Center" with direct entry (separate from main visitor entry) and access from the new east Parking Hub.
- Improved administration communication with the Entry Village adjacent to the west and the Education Center to the east.



Zoo Entry Plaza thru Asian Panorama Exhibit Section



TEST CONCEPTS

- New gateway off of the central plaza hub with dedicated loop system for controlling access.
- Active splash fountain plaza(s) with soft surface paving.
- Shaded play area with active play elements – Treehouse & Slide.
- Shaded Contact Area with farm animals, and perhaps sting rays and fish.
- Coffee café/snacks/ice cream & small gift.
- Carousel, kids train & station, and potentially other kiddy rides.
- Play gardens, moguls and hill.
- Exhibit & activity discovery trail linked to Treehouse concept.
- Kids sand castle beach with rollers and forms.
- Proximity to the Event Hub could allow for special birthday party rental options in this zone.
- Redevelop the existing historic theater as a smaller venue for kid's shows and other special events.



Carousel



Treehouse with Slide

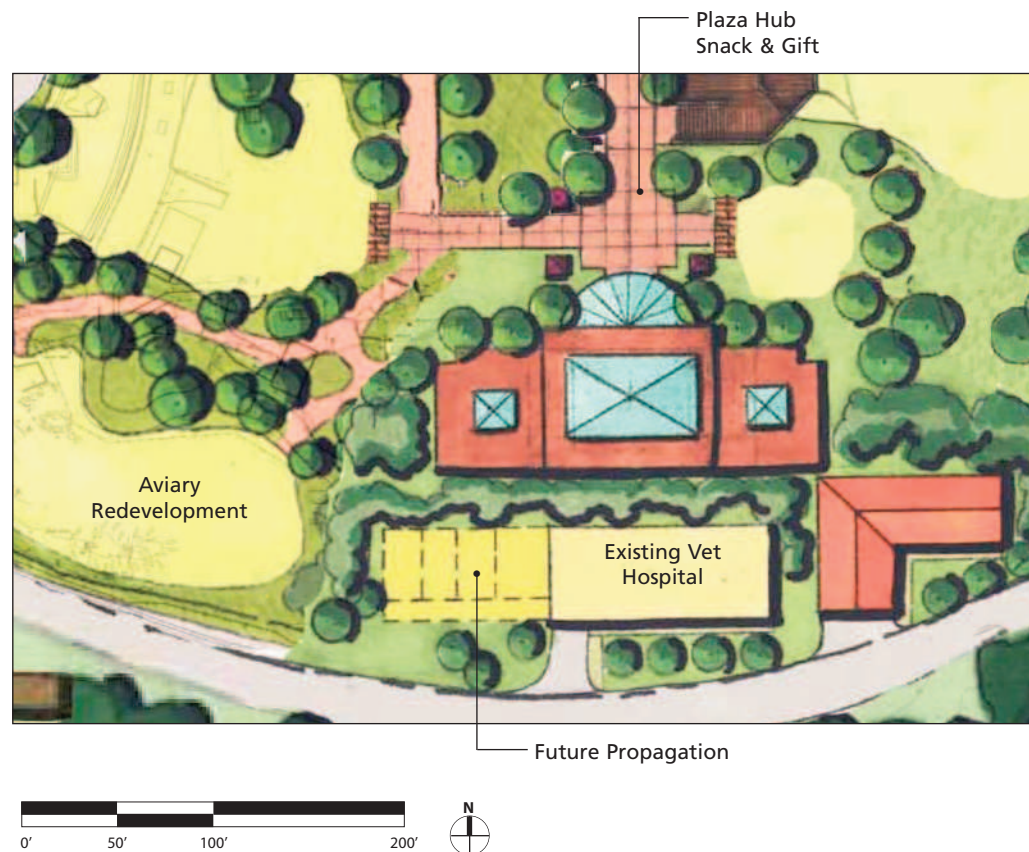


Contact Yard



Splash Fountain

Rainforest Aviaries and Exhibit Pavilion



TEST CONCEPTS

- Walk-thru Rainforest Conservatory that could feature birds, primates, cats, herps and more.
- Outdoor mesh habitats linked to conservatory with indoor and outdoor viewing.
- South Hub anchoring south end of north-south promenade.
- Bali style architecture and site features could characterize the look and feel of this hub linked to the Asian Archipelago exhibits.
- Existing outdoor rainforest zone could remain in a phased implementation scenario.
- Future expanded Vet Hospital Propagation facility located adjacent to, or linked to Conservatory & Hospital.



Parakeet



Langur



Chameleon



Hornbill

Safari Trail Phase 2 – Primates and Plaza Hub

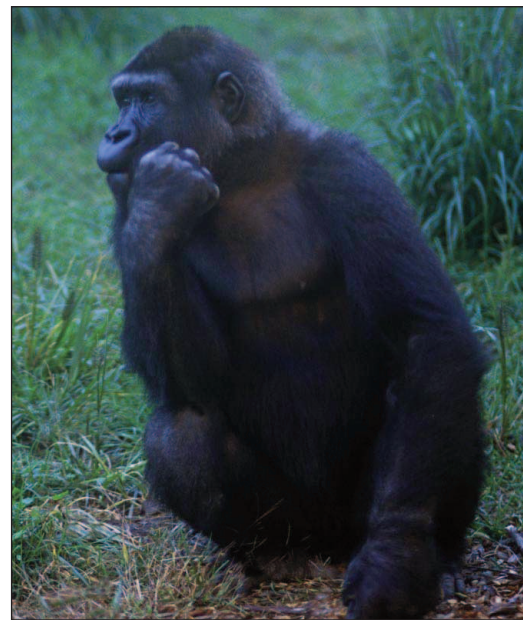


TEST CONCEPTS

- New anchor attraction and habitat zone located within the proposed Zoo expansion area.
- Habitat zone that could include multiple flex habitats within a forest and riverine landscape featuring lemurs, gorillas, baboons, colobus monkeys, guenons, fossa, flamingos, spoonbills and more.
- This expansion zone could have a more wild/immersive look and feel compared to the formal promenades and exhibit “gardens” proposed and existing at the Zoo.
- Safari Hub – Café, retail and indoor/outdoor exhibit facility. Architectural and site look & feel could be themed after a region in north Africa, such as Timbuktu and could provide a unique meeting or special event venue.
- The indoor Safari Hub exhibit facility could include up-close viewing of Predators (Safari Trail Phase 1) and Primates, and also include indoor/outdoor gem box gallery panoramas.
- Dedicated perimeter service road with easy access to new animal holding and support facilities.



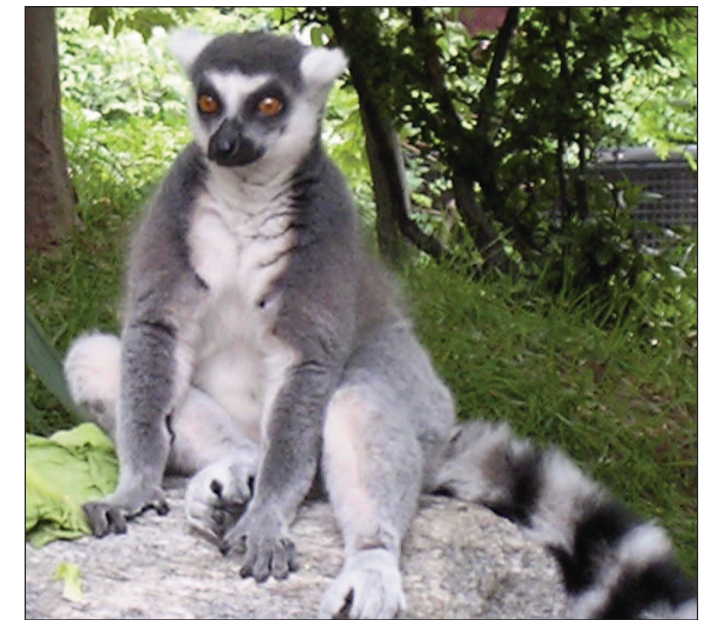
Flamingo



Gorilla

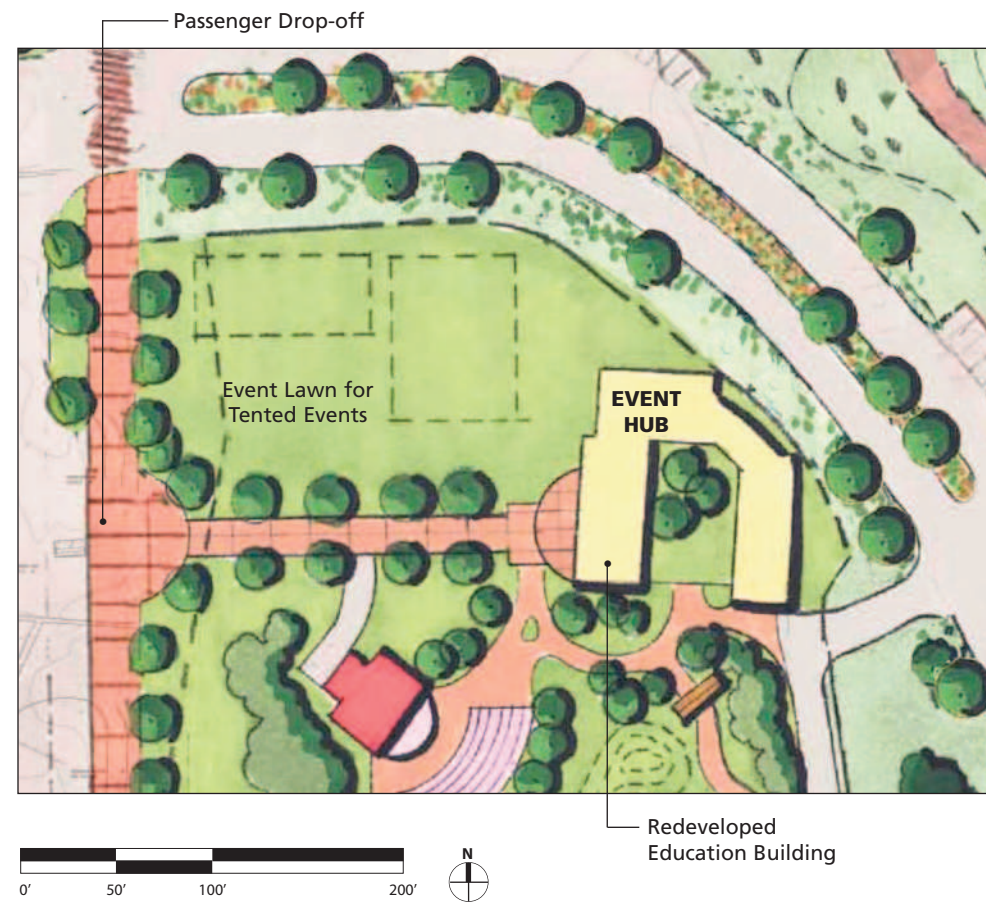


Spoonbill



Ring-Tailed Lemur

Main Event Hub and Lakeside Gardens



MAIN EVENT HUB CONCEPT

- Redeveloped education building and adjacent site to serve as the primary event facility with outdoor garden and lawn event space.

FUTURE ZOO EXPANSION AREA CONCEPT

- 6.5 acre landscape enhancement area, adjacent to the existing Park lakes, located within the proposed Zoo expansion site. This area can be used as a temporary (5+/- years) Zoo event zone.



CONCEPTUAL FRAMEWORK

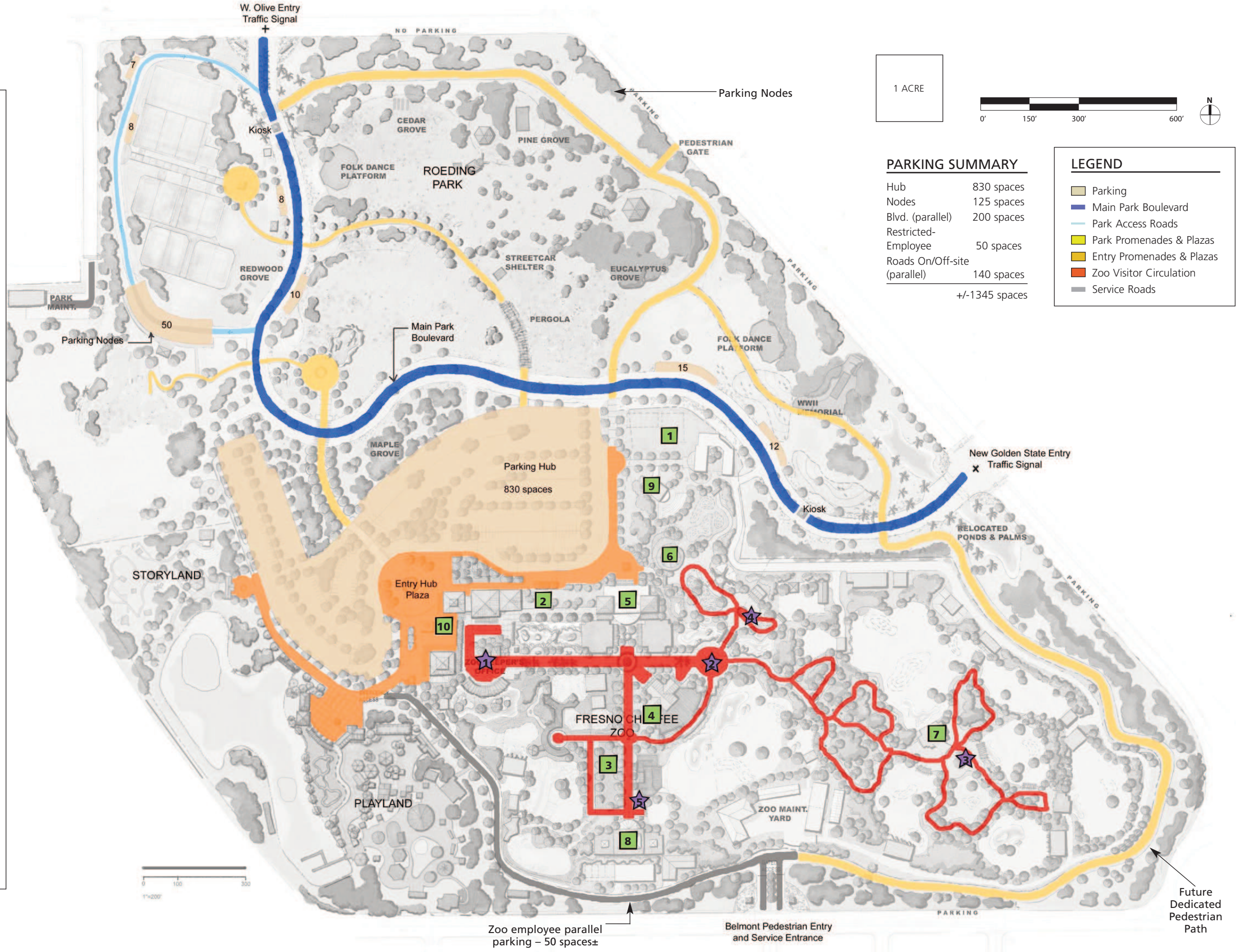
Parking and Visitor Flow

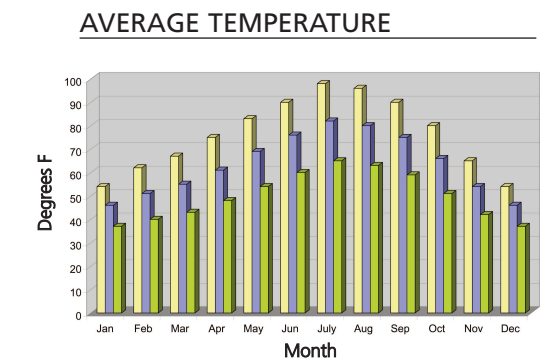
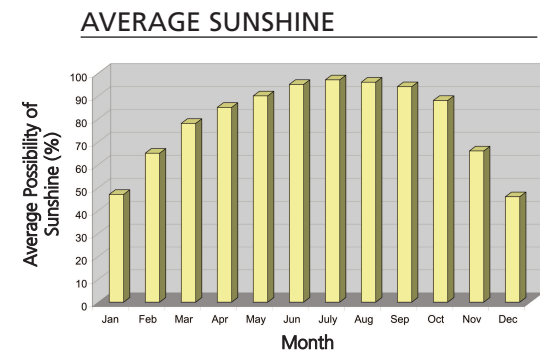
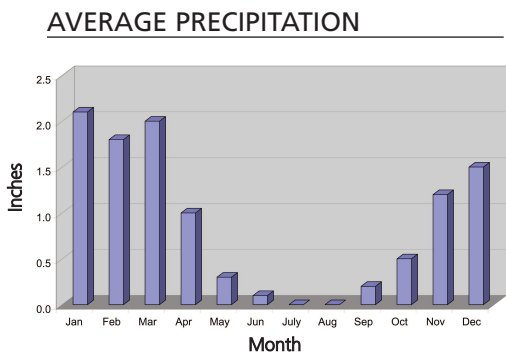
★ REVENUE HUBS

- 1 ZOO ENTRY VILLAGE**
Main Gift Shop
Ticketing/Memberships
Snack/Bakery
Guest Services
Restrooms/Comfort Station
Seating/Trellises
- 2 CENTRAL PLAZA HUB**
Waterhole Café & Event Center
Retail/Gift Option
Restrooms/Comfort Station
Panoramic Exhibit Views
Shady Oasis with Seating
- 3 SAFARI TRAIL HUB**
Café (Seasonal)
Retail/Gift Option (Seasonal)
Restrooms/Comfort Station
Shaded Decks with Exhibit Panoramas
Climate Controlled Exhibit Building
- 4 CHILDREN'S ZONE**
Coffee/Ice Cream Station
Carousel, Tot Train, Other Rides
Kids Theater
Restrooms/Comfort Station
- 5 SOUTH PROMENADE HUB**
Snack Cart Options
Retail/Gift Option (Seasonal)
Restrooms/Comfort Station

■ EVENT VENUES

- 1 MAIN EVENT HUB & LAWN**
- 2 EVENT GROVE AT ENTRY**
- 3 EVENT GROVE AT SOUTH ZOO**
- 4 CENTRAL PLAZA HUB & WATERHOLE CAFÉ**
- 5 ADVENTURE EDUCATION & D.O.L.**
- 6 CAROUSEL**
- 7 SAFARI TRAIL HUB CAFÉ**
- 8 RAINFOREST AVIARIES**
- 9 REDEVELOPED HISTORIC THEATER**
- 10 ENTRY VILLAGE PLAZA**





ENVIRONMENTAL FACTORS

The climatic graphs to the left show monthly averages for temperature, sunshine, and precipitation for Fresno, California. The following conclusions can be made based on this data:

1 Outdoor Animal Management/Exhibitry

Based on the monthly high temperatures (average yearly high temperature 76 degrees), most animals can remain outdoors during the day for up to 12 months per year. Appropriate shade is required during the hotter months.

2 Sun Energy

The high probability of sunshine throughout the year (average yearly possibility of sunshine 79%), especially during the summer, provides an opportunity to harvest sun energy with photovoltaics, and perhaps reuse the stored energy on-site.

3 Provide Shade

The high probability of sunshine, and higher temperatures during the summer months, suggests the need to provide plenty of shade for animals and visitors.

4 Minimize Water Consumption

The average amount of precipitation is 10.9 inches per year. Minimizing water consumption and maximizing the use of natural rainfall/greywater should be considered. Greywater reuse for the Park and Zoo may be an option.

5 Passive Cooling

Prevailing winds come predominantly from the west-northwest for most of the year. With a relatively low average relative humidity (78% AM, 41% PM) opportunities for passive cooling should be investigated.

CAMPUS ECOLOGY STRATEGIES

- 1 Manage storm water by constructing a new pond(s) to accept project storm water.
- 2 Create a Campus Ecology Hub to showcase the environmental building and site strategies and systems being utilized by the Park and Zoo. The new Adventure Education Pavilion could be the “Hub” and first “Green” facility on campus.
- 3 Develop recycling programs for the Park and Zoo. Create a designated zone for material storage for recycling and salvaged building materials for reuse.
- 4 Create information hubs throughout the campus to educate visitors on campus ecology and to interpret what the Park and Zoo are doing on-site.
- 5 The Park and Zoo will practice sustainable campus management.
- 6 The project will incorporate the design, construction and operational features described in Fresno Green.
- 7 Incorporate “Best Management Practices” to address a wide range of environmental issues such as the recycling of waste, energy conservation, water use and ground water protection.
- 8 Develop a comprehensive landscape plan that, wherever possible, seamlessly incorporates existing Zoo and Park trees and features into the landscape design for the campus. Tree/plant selections and replacements should integrate with the look and character of the surrounding areas. Open space and recreational opportunities should be maximized.
- 9 To the extent practical, respect the integrity of the existing Park horticultural and architectural theme.

Regional Mapping

REGIONAL CONTEXT

Roeding Park is located in the City of Fresno in Fresno County, California. The City of Fresno is located in California's Central Valley, approximately 160 miles southeast of San Francisco. The city is situated in the San Joaquin Valley, the southern-most part of the Central Valley, which lies between the Central Coastal Mountains to the east and the South Sierra Mountains to the west.

Located approximately 80 miles south of Yosemite National Park, Fresno is known as the 'Gateway to Yosemite.' With no other major city or attraction within a 60-mile radius, the city of Fresno and the Chaffee Zoo have the opportunity to be a destination attraction for tourists visiting the Central Valley.

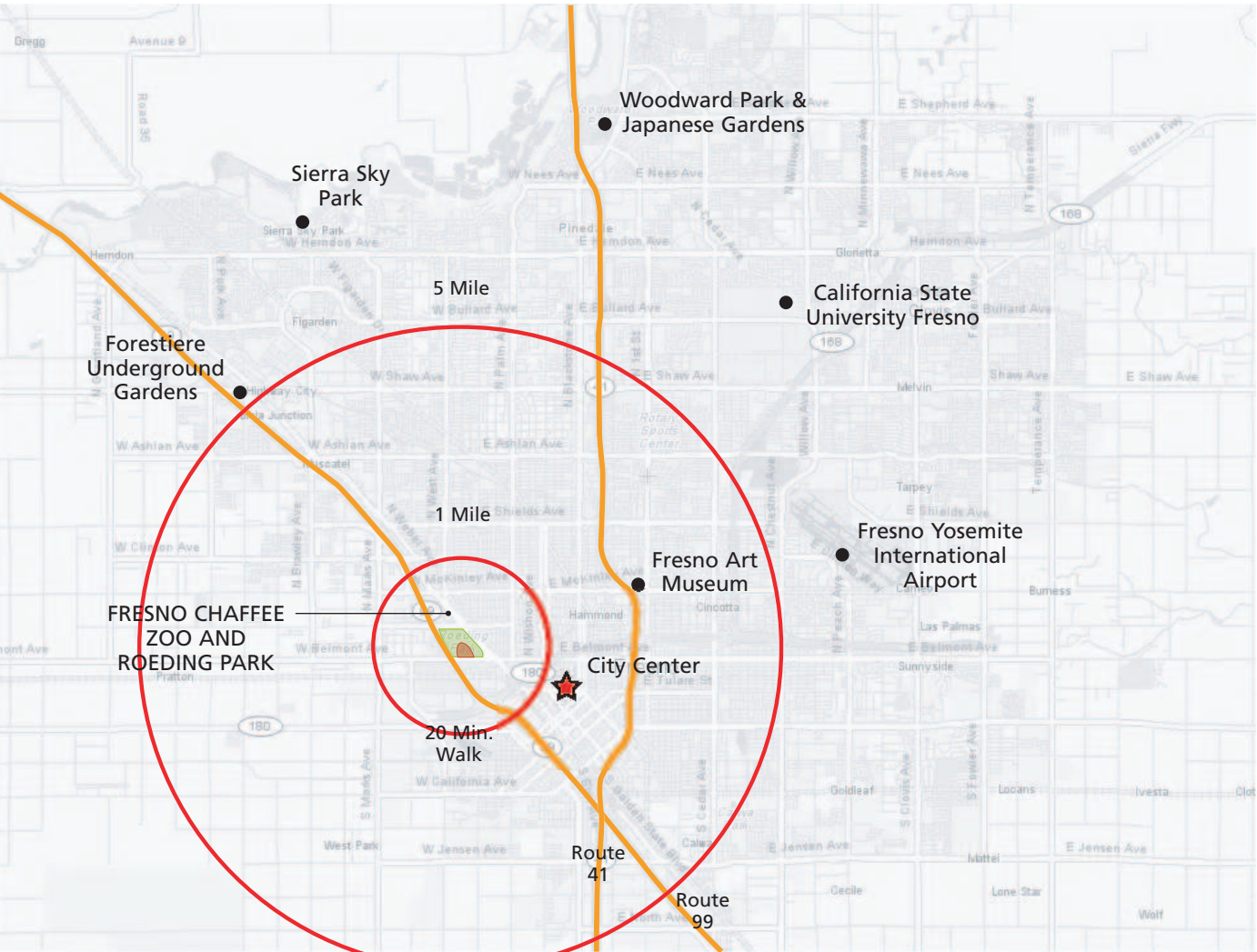


California Central Valley & Beyond – Aerial Photo

City and Neighborhood Context Mapping

CITY CONTEXT

Roeding Park is located at the southwest corner of the City of Fresno. The Park is bounded by West Olive Avenue to the north; West Belmont Avenue to the south; Golden State Boulevard to the east; and State Route 99 to the west, a state highway that runs N-S through California's Central Valley and acts as a major access route to Fresno.



City Regional Map

NEIGHBORHOOD CONTEXT

The surrounding context of the Park includes residential to the south and east and mixed use to the north and west. Visitors can enter the Park from gateways at West Belmont Avenue and West Olive Avenue. Downtown Fresno is located approximately 2 miles southeast of the Park, off of State Route 99.



Neighborhood Context Map

Roeding Park Organization

Existing Site Photos



Roeding Park Entry Gate



Chaffee Zoo Giraffe Feeding



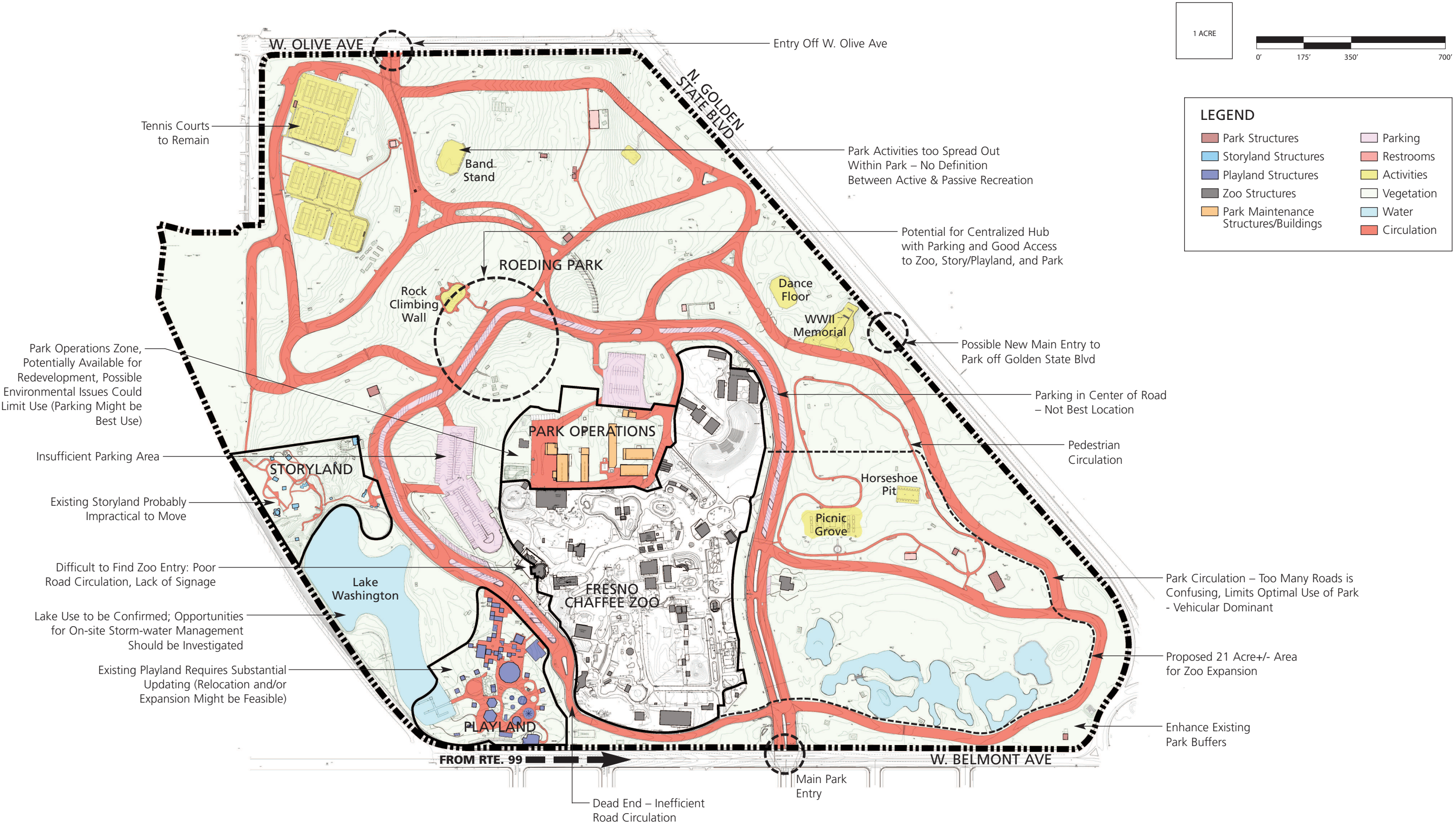
Playland



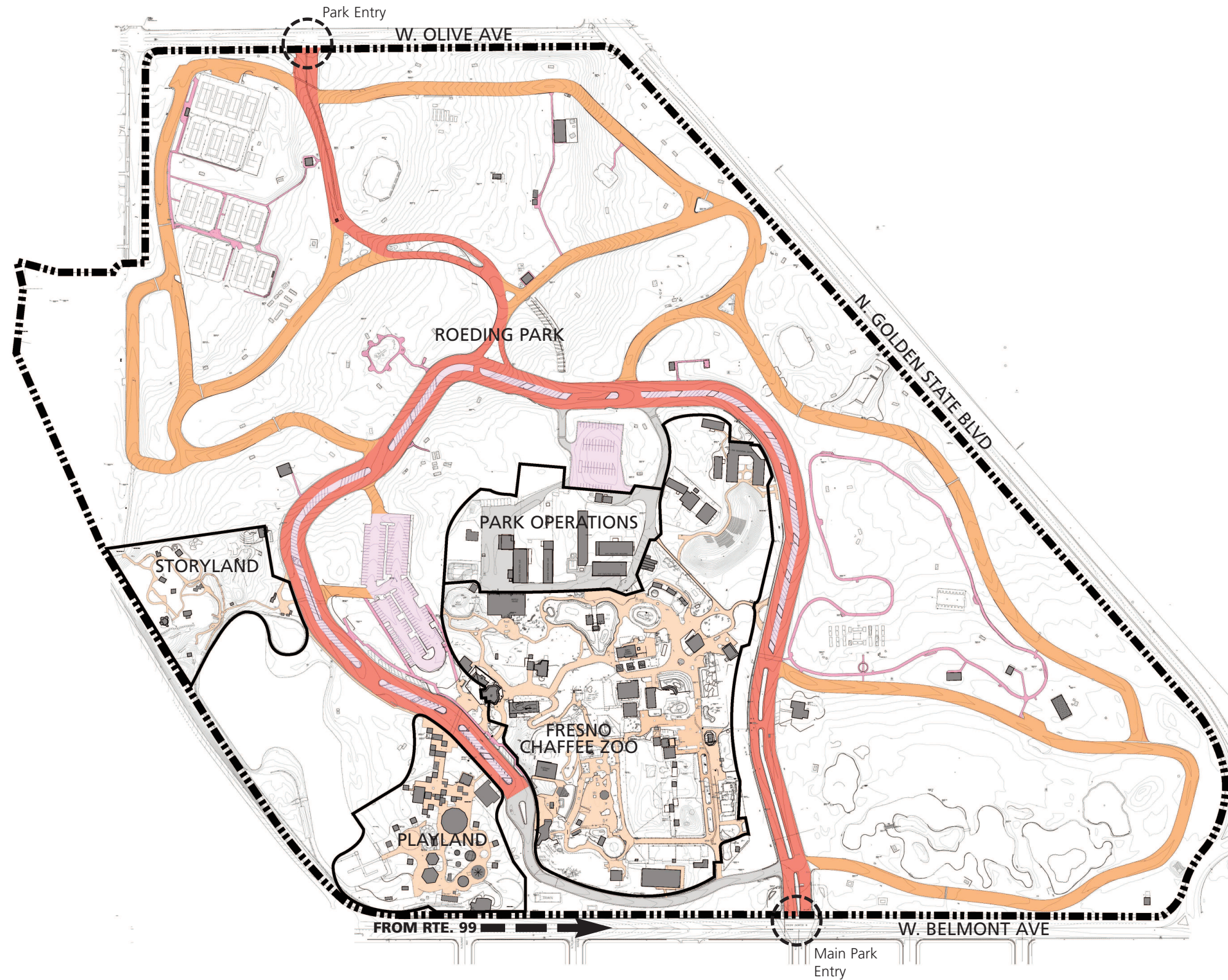
Storyland

Roeding Park Land Use and Analysis

Existing Condition



Roeding Park Circulation Existing Condition



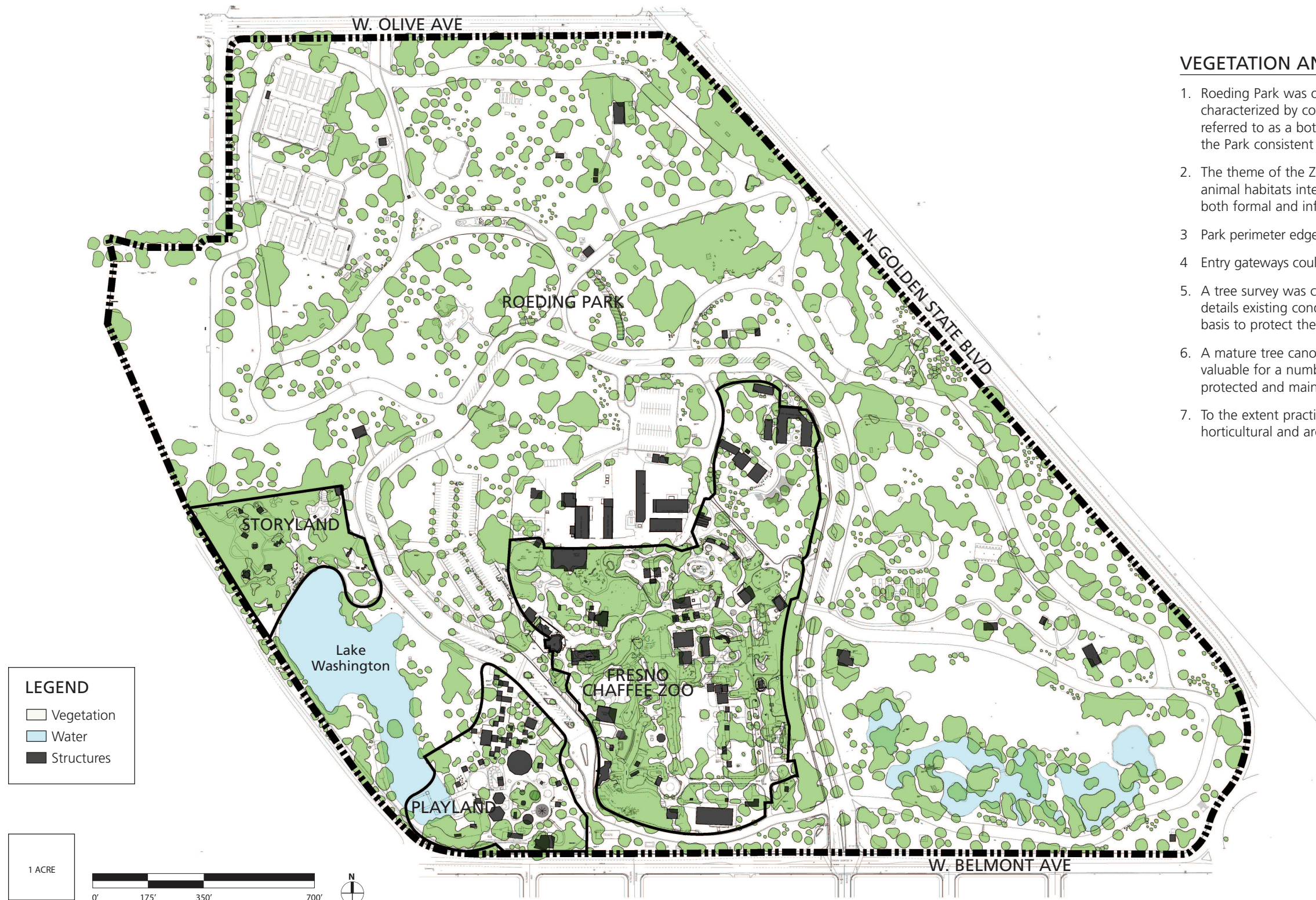
LEGEND

- Primary Vehicular Circulation
- Secondary Vehicular Circulation
- Service Circulation
- Roeding Park Pedestrian Circulation
- Chaffee Zoo, Playland & Storyland Circulation
- Structures
- ▨ Parking

CIRCULATION ANALYSIS SUMMARY

- 1 Too much vehicular circulation within the Park dominates, limits optimal use of Park.
- 2 Parking in center of road is not the best location.
- 3 Existing parking distribution creates ability to park close to visitor destination, although not the best location for parking at center of primary Park roads; the distributed parking works for the Park, but a more centralized hub would work better for the Zoo, Playland and Storyland.
- 4 Limited pedestrian circulation.
- 5 Insufficient number of parking spaces.
- 6 Service road south of Zoo creates dead end for visitor circulation.

Roeding Park Vegetation Existing Condition



VEGETATION ANALYSIS SUMMARY

1. Roeding Park was originally constructed in an arboretum style which is characterized by collections of specimen trees, shrubs and vines commonly referred to as a botanical garden. Mature groves of trees can be found in the Park consistent with the original planting theme of the Park.
2. The theme of the Zoo is considered to be that of a series of naturalistic animal habitats interspersed with mature trees and specimen plants along both formal and informal pedestrian pathways.
3. Park perimeter edges and frontage could be improved.
4. Entry gateways could be improved.
5. A tree survey was completed by Arbor Pro of Portland Oregon. That report details existing conditions of the Park's major trees and will be used as a basis to protect the Park's horticultural resources.
6. A mature tree canopy exists within the Park and Zoo which is highly valuable for a number of reasons, as such the tree canopy should be protected and maintained wherever possible.
7. To the extent practical, respect the integrity of the existing Zoo and Park horticultural and architectural theme.

Fresno Chaffee Zoo Land Use Existing Condition

LEGEND

Visitor Services Building

Exhibit Building

Holding Building

Admin, Operations & Maint. Building

Main Path

Animal Exhibit

Animal Yard

Circulation & Parking

Vegetation



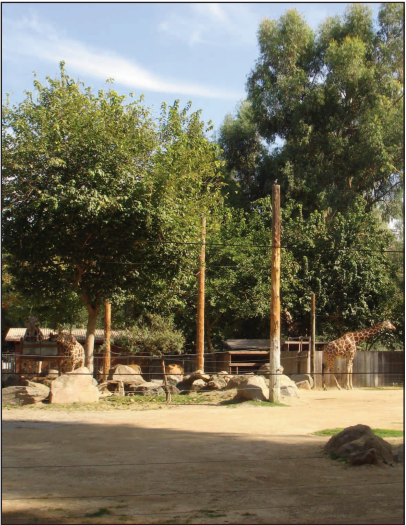
Orangutan



Asian Elephant



Amphitheater



Anteater

Jungle Bungalow

Birds

Grizzly Bear

Radiated Tortoise

Tropical Bird Aviary

Feed Storage

Giraffe

Owls, Vultures, Eagles

Peccary

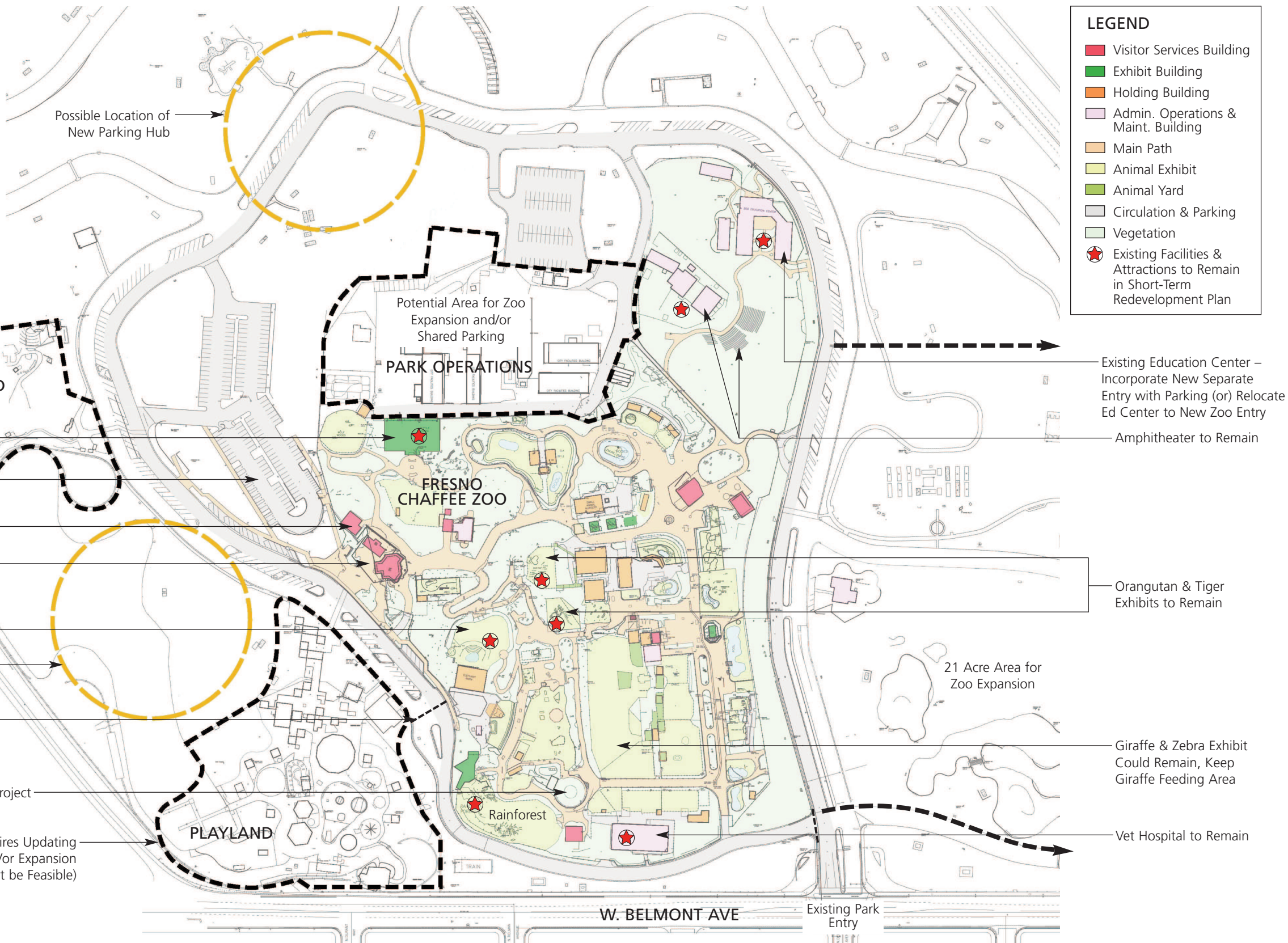
Ducks and Swans

Fresno Chaffee Zoo Site Analysis

Existing Condition

REDEVELOPMENT PRIORITIES

- 1 Expand visitor parking and create new Zoo entry.
- 2 Redevelop entry to improve retail, service, operations and overall experience.
- 3 Greatly improve path circulation and incorporate new wayfinding.
- 4 Incorporate Zoo hub concept with retail, food, guest services and panoramic views.
- 5 Define service areas – buffer from visitor experience.
- 6 Zoo expansion areas – incorporate larger habitats.
- 7 Incorporate/enhance buffers and landscape areas.
- 8 Multiple smaller habitats – organization and exhibitry could be improved.



UTILITIES

DOMESTIC WATER SYSTEM

Domestic water for the Chaffee Zoo is provided by the City of Fresno by way of the City's grid distribution system. The system is designed to provide fire flow and domestic water demand. It consists of a 12-inch and 8-inch diameter mains connected in series and looped around the Zoo periphery. These two mains are connected to a 12-inch diameter main in Belmont Avenue. This 12-inch and 8-inch looped main was constructed in 2001. The new looped water main appears to be adequate to meet the fire and domestic demand of the existing Chaffee Zoo.

SANITARY SEWER SYSTEM

Sanitary sewer service for the Chaffee Zoo is also provided by the City of Fresno. Sanitary sewer flows from the site are directed to two mains that ultimately convey the flows to the Regional Waste Water Treatment Plant (WWTP) located at Jensen Avenue and Polk Avenues. One sewer main that services the site is a 42-inch diameter pipeline that traverses the Park from north to south along the westerly boundary of the Zoo. This main accepts flows from approximately 95-percent of the site. The second main is a 10-inch diameter pipeline that conveys approximately 5-percent of the site to the east towards Golden State Boulevard and then southerly to the WWTP. The existing sewer mains are adequate to meet the peak sanitary sewer demand for the site.

STORM DRAINAGE SYSTEM

Storm drainage service for the Chaffee Zoo is provided by the City of Fresno through the sanitary sewer system described above. This situation creates two issues for the site. The first issue is the sanitary sewer system does not have sufficient capacity to convey the peak runoff from the site that would result during rainfall intensities having a 50-percent chance of being equaled or exceeded in any given year (a rainfall intensity with a 2-year return frequency). This rainfall intensity event is often considered the minimum acceptable service level for a drainage system. The low level of service provided by the sewer mains requires that inlets within the Zoo be designed to restrict the amount of runoff that is allowed to enter the sewer mains. This is necessary to reduce the periods of time in which the sewer main is surcharged (flowing under pressure) due to the combination of wastewater and storm water exceeding the capacity of the sewer main. Restricting the inflow rate for on-site inlet results in short term flooding at the

inlets and other locations within the Zoo during moderately intense or greater rainfall events. The second issue is that combining storm water with wastewater in sewer systems can cause surcharging of the main, which is an undesirable situation that disrupts the flow of sewer gases and can cause wastewater to backup into to service lines. Storm water in the sewer system also absorbs treatment capacity at the WWTP that is needed for wastewater. The Federal Government has encouraged the elimination of storm water connections to the sanitary sewer system when making Clean Water grants that are used to construct WWTPs. It is possible, depending on how the grants are worded, that the City could be in violation of their Clean Water grant agreements by allowing storm water from the Zoo to enter the sanitary sewer system. The existing storm drainage system that serves Chaffee Zoo is inadequate.

ELECTRICAL SERVICE

Background

There are between six (6) and eight (8) existing electrical services provided by Pacific Gas & Electric (PG&E) for the Park/Zoo Complex. They are distributed throughout the Complex and vary in both size and voltage. All electrical utilities are underground except at the north and west perimeters of the Park.

The largest and most centrally located service provides power to the City Yard and several Zoo buildings. According to PG&E, it is properly loaded at capacity. The other services are smaller and provide electrical power to individual facilities or buildings.

The details regarding exactly which buildings, facilities, or exhibits are fed by each service are yet to be determined.

Expansion

Because of the large number and distributed nature of the electrical services, it appears that an increased or rearranged electrical load can be served by a combination of rearranged existing and/or new services. While some costly rearrangements may be required for any increased loads, PG&E's primary electrical capacity in the area appears adequate to handle any such increase.

Upgrades to the existing electrical services will involve coordination with PG&E to determine the extent of the upgrade required. There has been in the past, and we would anticipate in the future, a desire on the part of PG&E to consolidate multiple services to a single customer into fewer individually metered services.

Coordination

Any upgrade work to the electrical services will require coordination with PG&E. In addition to involving PG&E in the construction process, we recommend engaging them in the design process, which typically requires a deposit, to help determine the best long-term path for upgrades and expansion.

We have given PG&E advance notice of pending changes at the Zoo / Park. The most economical sequence of involving PG&E in the design process is to develop the Master Plan to a point which identifies estimated electrical load sizes and locations and then engage PG&E in the design process.

NATURAL GAS SERVICE

Background

The existing gas service for the Park area is provided by Pacific Gas & Electric (PG&E). According to PG&E, there are three (3) existing services across the Park. Each service is provided with low pressure gas, about ¼ pound. The existing services are likely sized appropriately for the current loads and expansion is not likely possible.

Currently, the origin of the gas service is unknown. PG&E is in the process of verifying the source and location of each service in detail.

Expansion

It appears that there are several sources for natural gas in the immediate area and there are no known limitations on the amount of growth. Upgrades to the existing gas meters and service are feasible and will involve coordination with PG&E to determine the extent of the upgrade required. This however, will be the most costly approach.

PG&E has indicated that typically, if growth in the system is needed further than 500 feet from an existing gas service, a new service will be provided.

Coordination

Any upgrade work to the gas services will require coordination with PG&E. In addition to involving PG&E in the construction process, we recommend engaging them in the design process, which typically requires a deposit, to help determine the best long-term path for upgrades and expansion.

This will require knowledge about the direction of growth for the Park and Zoo and will likely need to take place during the Concepts and Master Planning phase.

Utility Contact

Joyce Priest
Industrial Power Engineer
Pacific Gas & Electric
705 P Street
Fresno, CA 93760
Phone: (559) 263-7409
Email: jaj1@pge.com

The following are the agencies that have jurisdiction on this project; construction plans, specifications and application for services will need to be filed with the following agencies:

Water	City of Fresno
Sewer	City of Fresno
Storm Drainage	City of Fresno/FMFCDD
Gas and Electrical	PG&E
Telephone and Data	Pacific Bell/AT&T

LAND USE ENTITLEMENTS

The existing Zoo is currently operated under an old Conditional Use Permit (CUP). The City of Fresno (City) is requiring the Zoo's authority to submit their Master Plan for review and apply for a new CUP. The new CUP should include the entire Park site. As part of the new CUP application, the City required the Zoo Authority to prepare an Environmental Impact Report (EIR) for the project.

Once the EIR for the project is completed, various neighborhood groups will be provided the opportunity to comment on the project EIR and CUP. In addition, the City of Fresno Historical Commission will also review the project in accordance with city policy. Thereafter, the project will be set for a public hearing before the Fresno City Planning Commission who will deliberate on the adequacy of the project EIR and the appropriateness of granting the related CUP. The action of the Fresno City Planning Commission is a recommendation to the Fresno City Council who will conduct its own public hearing on the project EIR and CUP.

After certification of the EIR and approval of the CUP, improvement plans will be prepared then submitted to the city, various regulatory agencies and others for review and approval. The project is also subject to various ministerial permits that will be granted for such activities as site grading, building construction, etc. only if those requests comply with all applicable standards.

Proposed Utility Master Plan

SANITARY SEWER MASTER PLAN

The sanitary sewer master plan for the Park and Zoo is designed to provide pipeline capacity that will convey wastewater from the Park and Zoo to one of two primary collector pipelines. One collector is a 42-inch diameter pipeline that runs north-to-south through the Park between the existing Zoo site and the Playland/Storyland areas. The second collector is a 10-inch diameter pipeline that runs easterly through the Park approximately 700 feet north of Belmont Avenue. These two collectors ultimately discharge into interceptor pipelines that convey wastewater to the Fresno Regional Wastewater Treatment Plant (WWTP) located at the southwest corner of Polk Avenue and Jensen Avenue.

The redevelopment of the Zoo will result in the elimination of much of the existing sewer due to improper alignment and sizing of the pipe and the need to isolate the sanitary sewer system from storm water runoff, which is occurring in the existing sewer system. Approximately 9,400 lineal feet of existing sewer mainline ranging in diameter from 42-inches to 6-inches will be removed and replaced with 8,000 lineal feet of new sewer mainline. Approximately 3,400 lineal feet of existing sewer mainline with the same sizes will be retained.

Most of the site is designed to discharge into the existing or relocated 42-inch collector line. This line provides the necessary capacity for the site and downstream users. Discharge to the existing 10-inch collector was limited in order to provide capacity for downstream users.

New master plan mainline pipelines will be designed to convey the estimated average daily flow for the site with the pipe half full and the peak daily flow with a pipe 80-percent full. Velocities within the pipes will be 2 feet per second or higher during average daily flows. The flow peak daily flow rates for each of the exhibits were determined from the water use for the exhibit. The average daily flow was estimated to be one-half of the peak daily flow.

The locations of the proposed mainline sewer lines will be determined when each segment is to be constructed. Individual services to the buildings and exhibits are not shown on the master plan. They will be located and sized at the time the construction design of the particular exhibit is undertaken.

Removal and replacement of portions of the existing 42-inch collector will be required to realign the pipeline around the outside of the proposed storm drainage basin and the proposed Zoo construction. This construction will need the approval of the City of Fresno Public Works Department. It will require by-pass pumping to keep the pipeline in service during the construction period. Connections to the existing and realigned portions of the 42-inch collector and the 10-inch collector will require the approval of the City of Fresno Public Works Department.

The realigned portions of the 42-inch collector will be constructed using poly-vinyl chloride (PVC) lined concrete pipe. New sewer main pipelines for the Zoo may be constructed using solid wall PVC pipe that meets the City of Fresno Public Works standards. Minimum slopes on the new sewer will conform to the City of Fresno Public Works Department minimum pipe slopes. Sewer manholes will be constructed at angle points in the onsite sewer mains and at intervals not to exceed 500 feet. Cleanout will not be allowed to be used in lieu of manholes.

Storm water from the Zoo will be directed to the storm water system and not to the sewer collection system for the Zoo.

Implementation of the sewer master plan will take place as different phases of the Zoo master plan are constructed. The Winged Wonders and Zoo Education buildings may have to remain connected to the existing 10-inch collector until the existing main portion of the Zoo is remodeled and the new sewer main that is necessary to serve those facilities is constructed.

WATER SYSTEM MASTER PLAN

Water for the Park and Zoo will be provided by the City of Fresno by way of the City's potable water distribution system, which consists of 14-inch water mains in Olive Avenue and in Belmont Avenue. The City's water main grid system typically provides potable water in sufficient quantities at 40 to 60 pounds per square foot (psi). The master plan water distribution system for the Park and Zoo contemplates five points of connection with the City of Fresno's potable water distribution system. Two connections are to the City's Olive Avenue water main and the remaining three are to the City's Belmont Avenue water main. One of these connections already exists resulting in four new connections. The master plan water system networks 12-inch diameter mains and 10-inch diameter mains to provide 2,000 gallons per minute fire flow with a maximum 10 psi drop from the nearest City water main to each of the nine fire hydrants on the site. Each fire hydrant has at least two connections to the City's water main system and provides overlapping coverage for a 600 foot radius around the hydrant. The master plan system will provide flow to building fire suppression systems and for domestic and landscape irrigation uses at the Zoo and the Park. Domestic uses were determined using water use records provided by the Zoo.

The connections to the City's water mains in Belmont Avenue and Olive Avenue will be made by the City of Fresno upon payment of the appropriate connection fee. Construction of the master plan water mains will require the payment of a plumbing fee to the City of Fresno. The installation of the system will be inspected by the City Plumbing Inspectors. Materials and construction standards for the installation of the system will conform to the City of Fresno Public Works standards.

Implementation of the water master plan will occur as different phases of the Zoo are constructed. Care will have to be taken at the time each phase of the Zoo is constructed to ensure that the proper water mains are constructed to provide fire protection to the sites and not exceed the maximum allowable pressure drop from the City's water main to each fire hydrant.

STORM DRAINAGE MASTER PLAN

The Park and Zoo were not included in the Fresno-Clovis Metropolitan Storm Drainage Master Plan. The Park provided drainage by draining to grassy areas, to a series of onsite ponds, and connections to the sanitary sewer system. The use of connections to the sanitary sewer system was particularly prevalent in the existing portion of the Zoo. The storm drainage master plan for the Zoo and Roeding Park contemplates a collection system that has a 2-Year event level and a disposal system that will retain the runoff from a 6-inch rainfall on the Park in its ultimate planned configuration. The collection and dis-

posal system will meet the design requirements of the Fresno Metropolitan Flood Control District for a permanent storm drainage system. The collection system will consists of storm drain inlets and pipelines that convey runoff from the Zoo and the Park to a retention basin. The pipelines will range in size from 18-inches in diameter to 42-inches in diameter. Inlet structures will be Fresno Metropolitan Flood Control District standard curb opening inlets or their standard grate inlet. The collection system will be designed to convey runoff from the Zoo and the Park under head during at 2-Year event while providing a minimum of 1-foot of freeboard between the hydraulic grade line and the inlet elevation at all inlet locations.

Storm drainage master plan pipelines will be constructed using cast-in-place concrete pipe, pre-cast reinforced concrete pipe, or in the case of pipe sizes of 24-inches or less, high density polyethylene plastic drainage pipe. Storm drain inlets will be poured in place concrete structures with metal grates or curb openings. Storm drain manhole structures will also be poured in place concrete structures with cast iron frames and lids.

Phasing of the storm drainage master plan to match the construction of the Zoo will be easily accomplished as none of the facilities that provide drainage service to the eastern expansion of the Zoo must pass through the existing Zoo. The cost to provide drainage service to the first phase of the Zoo will be relatively expensive due to the need to construct the retention basin and a large part of the collection system to provide drainage service to the first phase. Subsequent phases will reap the benefit of reduced costs to provide drainage service without impacting the City of Fresno WWTP.

GENERAL CONDITIONS

The project has retained qualified engineers, architects and planners with extensive public Park and Zoo design and construction experience. Those firms have cooperatively developed conceptual plans to serve the project infrastructure needs for the delivery of sewer, potable water, fire protection, storm drainage, electricity, gas, telephone and confirmed the availability of all services.

The City of Fresno has established standards for the design, construction and maintenance of infrastructure applicable to all public improvements. All project improvements will be in compliance with City of Fresno development standards. All plans, specifications and permits will be subject to review and approval by the city and/or other regulatory agencies or entities.

As part of the project environmental and general project review process, various city departments, other regulatory agencies and utility purveyors were provided the opportunity to review and comment on the project and make recommendations and/or suggest conditions to assure adequate infrastructure is available to the project. It has been determined infrastructure is available to serve the project or must be improved or extended to meet applicable service delivery standards. All such improvements or extensions of service will occur in accordance with City of Fresno development standards.

General development conditions and ministerial permits will also apply to the project. These standards and ministerial permits have been proven effective in reducing potential environmental impacts and protecting the public health, safety and welfare.

Proposed Water System Capacities

POOL CAPACITIES

Rainforest Waterfall Pond	.175 gpm
Stream	.163 gpm
Lemur Island	.150 gpm
Flamingo	.88 gpm
Sealion	.164 gpm
Crane	.191 gpm
Macaw	.96 gpm
Flight Cage N. Pool (small)	.38 gpm
Flight Cage S. Pool (large)	.68 gpm
Alligator	.107 gpm
Tapirs	.112 gpm
Tiger	.100 gpm
Duck Pond	.100 gpm
Swan Pool	.100 gpm
Bear	.116 gpm
Elephant Main Pool	.197 gpm
Elephant Middle Pool	.64 gpm
Anteater	.130 gpm
Llama	.145 gpm
Stingray	.124 gpm
Off Exhibit Hippo Pool	.124 gpm

FIRE PROTECTION SYSTEM

Fire Hydrant #1	.2000 gpm
Fire Hydrant #2	.2000 gpm
Fire Hydrant #3	.2000 gpm
Fire Hydrant #4	.2000 gpm
Fire Hydrant #5	.2000 gpm
Fire Hydrant #6	.2000 gpm
Fire Hydrant #7	.2000 gpm
Fire Hydrant #8	.2000 gpm
Fire Hydrant #9	.2000 gpm

EXHIBIT WASH DOWN

Entry	.54 gpm
Entry Restroom	.64 gpm
Australian Aviary	.41 gpm
Reptile House	.40 gpm
Galops	.40 gpm
Wolf Woods	.40 gpm
Prairie Dog	.20 gpm
Fennec Fox	.20 gpm
Anteater	.20 gpm
Llama	.20 gpm
Small Wonders	.60 gpm
Serval	.20 gpm
Tapir	.60 gpm
Rainforest	.60 gpm
Rainforest Restroom	.64 gpm
Giraffe	.40 gpm
Peccary	.40 gpm
Warthog	.40 gpm
Kangaroos	.40 gpm
Tortoise/Waterfowl	.40 gpm
Birds of Prey	.40 gpm
Addex	.40 gpm
Carnel	.40 gpm
Stingray Bay	.40 gpm
Sealion	.60 gpm
Flamingo	.40 gpm
Bear	.40 gpm
Small Primates	.80 gpm
Winged Wonders	.40 gpm
Café Restroom	.64 gpm
Education	.90 gpm
Administration	.60 gpm

IRRIGATION AND LANDSCAPE

Irrigation	.161 gpm
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Proposed Electrical Master Plan

BACKGROUND

Based on discussions with the local utility, Pacific Gas and Electric (PG&E), and electric utility maps, there are several electrical services that provide power to the Park and Zoo. The current services are at or near capacity.

The largest existing service is a 500 KVA that is shared by the Zoo and the City Park Operations facility. It is not known how much of the service is utilized by the Zoo. The current agreement between the Zoo and the City permits the Zoo to receive water and trash services at no cost and in turn, the Zoo pays all of the electric utility costs associated with the 500 KVA electrical service.

OPTIONS CONSIDERED

The existing electrical service across the Park has little or no room for expansion. Therefore, new electrical services will be needed for the Zoo and any subsequent Rotary Storyland/Playland expansions.

The feasibility of providing medium voltage service for the Zoo expansion was examined. However, since the existing services are 480/277V and below across the Park, all new infrastructure would be needed. Furthermore, the maintenance associated with a medium voltage system would necessitate periodic shutdowns of portions of the Zoo electrical system and the use of standby portable power generation. This, coupled with the limited experience of the Park and Zoo staff with maintenance of medium voltage systems make this option less feasible than the current 480/277V.

To minimize the first cost and for the ease of maintenance, a new distribution system at 480/277V, 3 phase is recommended.

UTILITY CONTACT

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NEW SERVICES AND ELECTRICAL REQUIREMENTS

A minimum of three services are identified for the Zoo and the Park. Each of the services will serve a large and different area of the Zoo and surrounding Park. Each service will serve a group of individual buildings directly. Electrical feeders will be routed underground between a service switchboard and one 480/277V, 3 phase panelboard in the electrical room in each building to serve lighting loads and mechanical equipment. Electrical rooms will also contain a step down transformer and at least one 120/208V, 3 phase panelboard to supply other loads.

The existing City Park Operations facility will remain connected to the existing service. Once the City Park Operations is relocated out of the Park area, this service will be removed.

ZOO ELECTRICAL SERVICE 1

One 2500KVA service located between the Administration building and Education Center will feed the Diversity of Life and Education Center, Sea Lion Exhibit, Entry Village & Asia Panorama, Children's Zone, Administration Hub (at Entry Village), Event Hub and Gardens, Golden State Entry and Boulevard, and Parking Hub. These areas have an estimated load of 2497 KVA.

Diversity of Life and Education Center			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Classrooms, Offices, and Support	12000	20	240
Exhibit Pavilion 1	5000	30	150
Plazas, Courtyards, Site Furnishings	10000	1	10
Estimated Power Requirements (KVA)			400

Sea Lion Exhibit			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Outdoor Sea Lion Exhibit	4000	20	80
Birds & Other Aquatics	2500	20	50
Holding and Support	2200	20	44
Plazas, Courtyards, Site Furnishings	4500	1	4.5
Estimated Power Requirements (KVA)			178.5

Entry Village & Asia Panorama			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Gift Shop & Support	7000	20	140
Ticketing, Membership, Guest Services	4000	20	80
Entry Plaza	30000	1	30
Zoo Plaza	22500	1	22.5
Exhibit Panorama	16000	5	80
Estimated Power Requirements (KVA)			352.5

Children's Zone			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Tree House Play & Exhibits	1		15
Carousel	1		75
Tot Train	1		15
Contact Yard & Barns	10000	2	20
Kid's Show	6500	15	97.5
Splash Zone	1200	10	12
Snack Coffee & Ice Cream Station	1000	20	20
Plazas, Site Furnishings, Play Moguls	15000	1	15
Estimated Power Requirements (KVA)			269.5

Administration Hub (at Entry Village)			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Administration and Surrounding Area	15000	20	300
Estimated Power Requirements (KVA)			300

Event Hub & Gardens			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Event Hub - Facilities	15000	20	300
Event Hub - Catering Kitchen	5000	25	125
Event Lawn	50000	0.2	10
Estimated Power Requirements (KVA)			435

Golden State Entry & Boulevard			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Golden State Entry			10
Boulevard	234000	0.2	46.8
Furnishings/Lighting/Landscape	100000	0.5	50
Estimated Power Requirements (KVA)			106.8

Parking Hub			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Parking Paving	350000	0.2	70
Paths, Landscape, Tree Protection	200000	0.2	40
Estimated Power Requirements (KVA)			110

Proposed Electrical Master Plan

ZOO ELECTRICAL SERVICE 2

One 1500KVA service located to the west of Rainforest Aviaries and Exhibit Pavilion will feed the Grasslands and Waterhole & Central Café – Phase 1 and 2, Asia Archipelago Expansion, and Rainforest Aviaries & Exhibit Pavilion. These areas have an estimated load of 1329 KVA.

Grasslands and Waterhole & Central Café - Phase 1			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Café	7600	20	152
Grasslands Phase 1 - Waterhole	45000	2	90
Giraffe feeding Station	1		35
Plazas, Promenades, Site Furnishings	25000	1	25
Estimated Power Requirements (KVA)			302

Grasslands and Waterhole & Central Café - Phase 2			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Mixed Species Habitats	50000	0.5	25
Holding Barns - Hoofstock	3000	10	30
Holding Barns - Rhino, others	4000	10	40
View/Shade Structure	2500	1	2.5
Paths, Roads, Site Furnishings	12000	1	12
Estimated Power Requirements (KVA)			109.5

Asia Archipelago Expansion			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Elephant / Tapir Expansion	25000	1	25
Asia Expansion Holding Barn	5000	20	100
Orangutan Habitat Expansion	2500	10	25
Tiger Habitat Expansion	3000	10	30
View/Shade Structures	1500	20	30
Paths, Roads, Site Furnishings	20000	1	20
Estimated Power Requirements (KVA)			230

Rainforest Aviaries & Exhibit Pavilion			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Exhibit Pavilion	15000	40	600
Outdoor Mesh Exhibits	8000	0.5	4
Snack Café & Seasonal Gift	3500	20	70
View/Shade Structures	3000	1	3
Paths, Decks, Roads, Site Furnishings	10000	1	10
Estimated Power Requirements (KVA)			687

ZOO ELECTRICAL SERVICE 3

One 1500KVA service located to the North of Commissary Building will feed the Safari Trail Phase 1 and Phase 2, Show Amphitheater, and Zoo Operations & Maintenance – Phase 1 and 2. These areas have an estimated load of 1410 KVA.

Safari Trail Phase 1: Predators			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Predator Habitats	100000	0.5	50
Predator Holding Buildings	5500	10	55
View/Shade Structure	2200	1	2.2
Paths, Roads, Site Furnishings	20000	1	20
Estimated Power Requirements (KVA)			127.2

Safari Trail Phase 2: Primates & Hub			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Indoor Exhibit Facility	3500	20	70
Snack Café & Seasonal Gift	3500	20	70
Outdoor Habitat	75000	0.5	37.5
Holding Buildings	5500	10	55
View/Shade Structures	2500	1	2.5
Paths, Decks, Roads, Site Furnishings	10000	1	10
Estimated Power Requirements (KVA)			245

Show Amphitheater			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Amphitheater and Surrounding Area	65000	5	325
Estimated Power Requirements (KVA)			325

Zoo Operations & Maintenance - Phase 1			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Maintenance Barn	5000	15	75
Maintenance Yard	22500	1	22.5
Commissary & Warehouse	8000	15	120
Offices, Restrooms, Support	7500	20	150
Quarantine Facility	4000	15	60
Outdoor Pens	2000	1	2
Paving/Yards, Storage Bins, Parking	15000	1	15
Estimated Power Requirements (KVA)			444.5

Zoo Operations & Maintenance - Phase 2			
	Net Area (sf)	Watts/sf	Total Watts (KVA)
Propagation 1	8000	5	40
Horticulture Greenhouses	9000	20	180
Horticulture Nursery/Support	2000	20	40
Paving, Storage Bins	7500	1	7.5
Estimated Power Requirements (KVA)			267.5

BACKGROUND

The existing gas service for the Park area is provided by the local utility, Pacific Gas & Electric (PG&E). According to PG&E, there are three (3) existing services across the Park. Each service is provided with low-pressure gas, about ¼ pound.

OPTIONS FOR GROWTH

There is a main gas transmission line along West Belmont Avenue that is maintained at 60 psi or greater, so there are no known limitations on the amount of growth for the Zoo and the Park overall.

It is recommended that natural gas services for the Zoo expansion be provided at medium pressure to provide flexibility in pipe routing from the gas meters to each building. Medium pressure service will also facilitate modifications to the site and building gas piping for future expansions and modernizations.

It is recommended that new gas piping be provided for all of the buildings and facilities at the Zoo. Due to the phased approach of the planned expansion, it will be necessary to maintain existing gas service to the entire Zoo while new buildings and facilities are under construction. Furthermore, the location of much of the existing gas piping between the meters and the existing facilities is unknown. Finally, Zoo maintenance staff have indicated that the condition of the existing underground gas piping is poor and much that has been uncovered or modified in recent years is in need of replacement.

PG&E has indicated that typically, if growth in the system is needed further than 500 feet from an existing gas service, a new service will be provided. Depending upon the final layout of the gas piping for each designated service, PG&E may elect to upgrade service or provide new service. In either case, it appears that maintaining operation to the existing Zoo facilities will require all new piping from West Belmont Avenue to the existing and new meters.

COORDINATION

Any new or upgrade work will require coordination with PG&E. In addition to involving PG&E in the construction process, it is recommended that the designers engage them early in the design process. The coordination and implementation process can often take several months to complete and involving the utility early can mitigate impacts to the project schedule during construction.

UTILITY CONTACT

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NEW NATURAL GAS SERVICE REQUIREMENTS

A minimum of three services are identified for the Zoo and the Park. Each of the services will serve a large and different area of the Zoo and surrounding Park. Each service will serve a group of individual buildings directly.

It is recommended that any new gas meters be located near the electrical service for ease of installation and maintenance. Gas piping will be routed underground between the main piping header at the gas meter and each building. A pressure regulator, if medium pressure is provided, and shutoff valve will be provided near an exterior wall of each building.

ZOO NATURAL GAS SERVICE 1

One 5550 MBH service located between the Administration building and Education Center will feed the Diversity of Life and Education Center, Sea Lion Exhibit, Entry Village & Asia Panorama, Children's Zone, Administration Hub (at Entry Village), and Event Hub & Gardens. These areas have an estimated load of 5542 MBH.

Diversity of Life and Education Center			
	Net Area (sf)	Btuh/SF	Total (MBH)
Classrooms, Offices, and Support	12000	45	540
Exhibit Pavilion 1	5000	60	300
Plazas, Courtyards, Site Furnishings	10000		0
Estimated Natural Gas Requirements (MBH)			840

Sea Lion Exhibit			
	Net Area (sf)	Btuh/SF	Total (MBH)
Outdoor Sea Lion Exhibit	4000		0
Birds & Other Aquatics	2500	60	150
Holding and Support	2200	60	132
Plazas, Courtyards, Site Furnishings	4500		0
Estimated Natural Gas Requirements (MBH)			282

Entry Village & Asia Panorama			
	Net Area (sf)	Btuh/SF	Total (MBH)
Gift Shop & Support	7000	45	315
Ticketing, Membership, Guest Services	4000	45	180
Entry Plaza	30000		0
Zoo Plaza	22500		0
Exhibit Panorama	16000		0
Estimated Natural Gas Requirements (MBH)			495

Children's Zone			
	Net Area (sf)	Btuh/SF	Total (MBH)
Tree House Play & Exhibits	1		15
Carousel	1		75
Tot Train	1		15
Contact Yard & Barns	10000	60	600
Kid's Show	6500		0
Splash Zone	1200		0
Snack Coffee & Ice Cream Station	1000	45	45
Plazas, Site Furnishings, Play Moguls	15000		0
Estimated Natural Gas Requirements (MBH)			750

Administration Hub (at Entry Village)			
	Net Area (sf)	Btuh/SF	Total (MBH)
Administration and Surrounding Area	15000	45	675
Estimated Natural Gas Requirements (MBH)			675

Event Hub & Gardens			
	Net Area (sf)	Btuh/SF	Total (MBH)
Event Hub - Facilities	15000	60	900
Event Hub - Catering Kitchen	5000	200	1000
Event Lawn	50000		0
Estimated Natural Gas Requirements (MBH)			1900

Proposed Natural Gas Master Plan

ZOO NATURAL GAS SERVICE 2

One 2270 MBH service located to the west of Rainforest Aviaries and Exhibit Pavilion will feed the Grasslands and Waterhole & Central Café - Phase 1 and 2, Asia Archipelago Expansion, and Rainforest Aviaries & Exhibit Pavilion. These areas have an estimated load of 2269 MBH.

Grasslands and Waterhole & Central Café - Phase 1			
	Net Area (sf)	Btuh/SF	Total (MBH)
Café	7600	60	456
Grasslands Phase 1 - Waterhole	45000		0
Giraffe feeding Station	1		35
Plazas, Promenades, Site Furnishings	25000		0
Estimated Natural Gas Requirements (MBH)			491

Grasslands and Waterhole & Central Café - Phase 2			
	Net Area (sf)	Btuh/SF	Total (MBH)
Mixed Species Habitats	50000		0
Holding Barns - Hoofstock	3000	60	180
Holding Barns - Rhino, others	4000	60	240
View/Shade Structure	2500		0
Paths, Roads, Site Furnishings	12000		0
Estimated Natural Gas Requirements (MBH)			420

Asia Archipelago Expansion			
	Net Area (sf)	Btuh/SF	Total (MBH)
Elephant / Tapir Expansion	25000		0
Asia Expansion Holding Barn	5000	60	300
Orangutan Habitat Expansion	2500		0
Tiger Habitat Expansion	3000		0
View/Shade Structures	1500		0
Paths, Roads, Site Furnishings	20000		0
Estimated Natural Gas Requirements (MBH)			300

Rainforest Aviaries & Exhibit Pavilion			
	Net Area (sf)	Btuh/SF	Total (MBH)
Exhibit Pavilion	15000	60	900
Outdoor Mesh Exhibits	8000		0
Snack Café & Seasonal Gift	3500	45	158
View/Shade Structures	3000		0
Paths, Decks, Roads, Site Furnishings	10000		0
Estimated Natural Gas Requirements (MBH)			1058

ZOO NATURAL GAS SERVICE 3

One 2890 MBH service located to the North of Commissary Building will feed the Safari Trail Phase 1 and Phase 2, and Zoo Operations & Maintenance – Phase 1 and Phase 2. These areas have an estimated load of 2886 MBH.

Safari Trail Phase 1: Predators			
	Net Area (sf)	Btuh/SF	Total (MBH)
Predator Habitats	100000		0
Predator Holding Buildings	5500	60	330
View/Shade Structure	2200		0
Paths, Roads, Site Furnishings	20000		0
Estimated Natural Gas Requirements (MBH)			330

Safari Trail Phase 2: Primates & Hub			
	Net Area (sf)	Btuh/SF	Total (MBH)
Indoor Exhibit Facility	3500	60	210
Snack Café & Seasonal Gift	3500	45	158
Outdoor Habitat	75000		0
Holding Buildings	5500	60	330
View/Shade Structures	2500		0
Paths, Decks, Roads, Site Furnishings	10000		0
Estimated Natural Gas Requirements (MBH)			698

Zoo Operations & Maintenance - Phase 1			
	Net Area (sf)	Btuh/SF	Total (MBH)
Maintenance Barn	5000	60	300
Maintenance Yard	22500		0
Commissary & Warehouse	8000	100	800
Offices, Restrooms, Support	7500	45	338
Quarantine Facility	4000	60	240
Outdoor Pens	2000		0
Paving/Yards, Storage Bins, Parking	15000		0
Estimated Natural Gas Requirements (MBH)			1678

Zoo Operations & Maintenance - Phase 2			
	Net Area (sf)	Btuh/SF	Total (MBH)
Propagation 1	8000		0
Horticulture Greenhouses	9000	10	90
Horticulture Nursery/Support	2000	45	90
Paving, Storage Bins	7500		0
Estimated Natural Gas Requirements (MBH)			180

APPENDIX

Zoo Renovations Package – Test Project List

1.0 GENERAL MAINTENANCE ITEMS

- 1.1 Painting Package: Back Fences, Night Houses, Tapir & Old Chimp Exhibits, Bonner Classroom Building, Animal Sheds, Hay Barn, Concession Stand, and Handrails
- 1.2 Remove water storage tank at west gate
- 1.3 Rainforest Repair Items: Replace thatch roof at entry, repair foot bridge, repair sky walk decking
- 1.4 Elephant exhibit arbor timber removal and replacement
- 1.5 Paving removal and repair ~3000 SF (paths and plazas to remain in long-term Master Plan)
- 1.6 Exterior lighting replacement
- 1.7 Entry Repair/Upgrade Package: Repair/Replace thatch over ticket booths, add netting at Entry to deter pigeons, add changing stations to restrooms at entry, and temporary stroller storage/staging

2.0 GRAPHICS & SIGNAGE ITEMS

- 2.1 Entry Package: Signage, Banners, Sound System/Audio Repair and Replacement
- 2.2 Way-finding Package: Signage Repair and Replacement
- 2.3 Interpretive/Exhibit Package: Signage Repair and Replacement

3.0 EXHIBIT RELATED ITEMS

3.1 Rainforest Repair & Replacement Package

- 3.1a Relocate Hyacinth Macaw to exit near Maddis House (new mesh, cable, & exhibit fit-out items)
- 3.1b Relocate marmoset/tamarin exhibit near entrance to Maddis House (new mesh, cable, and exhibit fit-out items)
- 3.1c Renovate existing macaw area for both macaw and dwarf caiman exhibit
- 3.1d Add filtration/heating system to existing exhibit pool/stream
- 3.1e Replace mesh on existing toucan exhibit
- 3.1f Renovation of existing Maddis House walk-thru (path repair, planting, stream repair, painting, exhibit fit-out items, and graphics)

3.2 Anteater Exhibit Repair & Upgrade Package:

- 3.2a Repair & refinish (paint) rockwork at back and sides of exhibit (approximately 1800 LF x 8' Ht)
- 3.2b Replace waterfall and pool on northwest corner of exhibit
- 3.2c Add shifts to allow for transfers between two exhibits (capybara and anteater)
- 3.2d Add shifts to management area to allow for animal transfers between all three holding buildings

3.3 Swan Exhibit Repair & Upgrade Package:

- 3.3a Add mesh to this area to create two separate exhibits for small primates, which will be required if the existing Primate Row is removed for implementation of early action Master Plan projects
- 3.3b Add filtration/heating system to the existing pool to allow for year-round turtle & fish exhibits

3.4 Bird-of-prey exhibit mesh replacement

- 3.5 Hoofstock Exhibits: Repair/replace existing wooden fence at all three exhibits and move closer to visitor path (approximately 750 LF)



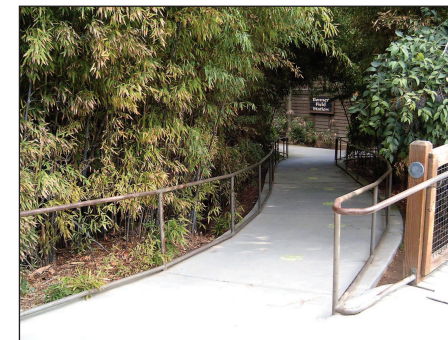
Storage Tank



Arbor



Bonner Classroom



Handrails



Sea Lion



Hay Barn



Old Chimp Exhibit



Tapir



Rain Forest



Foot Bridge



Zebra Shed



Skywalk

Conceptual Architecture and Site Imagery

PUBLIC SPACE

The following reference photos depict some of the key site and architectural concepts being proposed at the Park and Zoo. The proposed Park Promenades and the main Zoo Promenade are envisioned to include many of those architectural elements typically found at some of the great public spaces. Architectural elements such as landscaping, paving, sculpture, fountains, seat walls, benches, ornamental pedestrian scale lighting, signage, drinking fountains, and fencing could all be of a similar look and feel, which would help unify the Park and Zoo circulation systems. An informal, rhythmic organization of trees and border plantings flanking the edges of the promenades and plazas is proposed to reinforce the circulation patterns, create a sense of "scale", provide visual interest and provide shade. The proposed plaza hubs including the Park Plaza Hub, the Zoo Entry Village and the Zoo Central Plaza Hub could include all of the architectural elements noted above, and also include guest amenities such as retail, restrooms, food/coffee/snack, tables and chairs and more.



Central Park, New York City



Oaxaca, Mexico



Oaxaca, Mexico

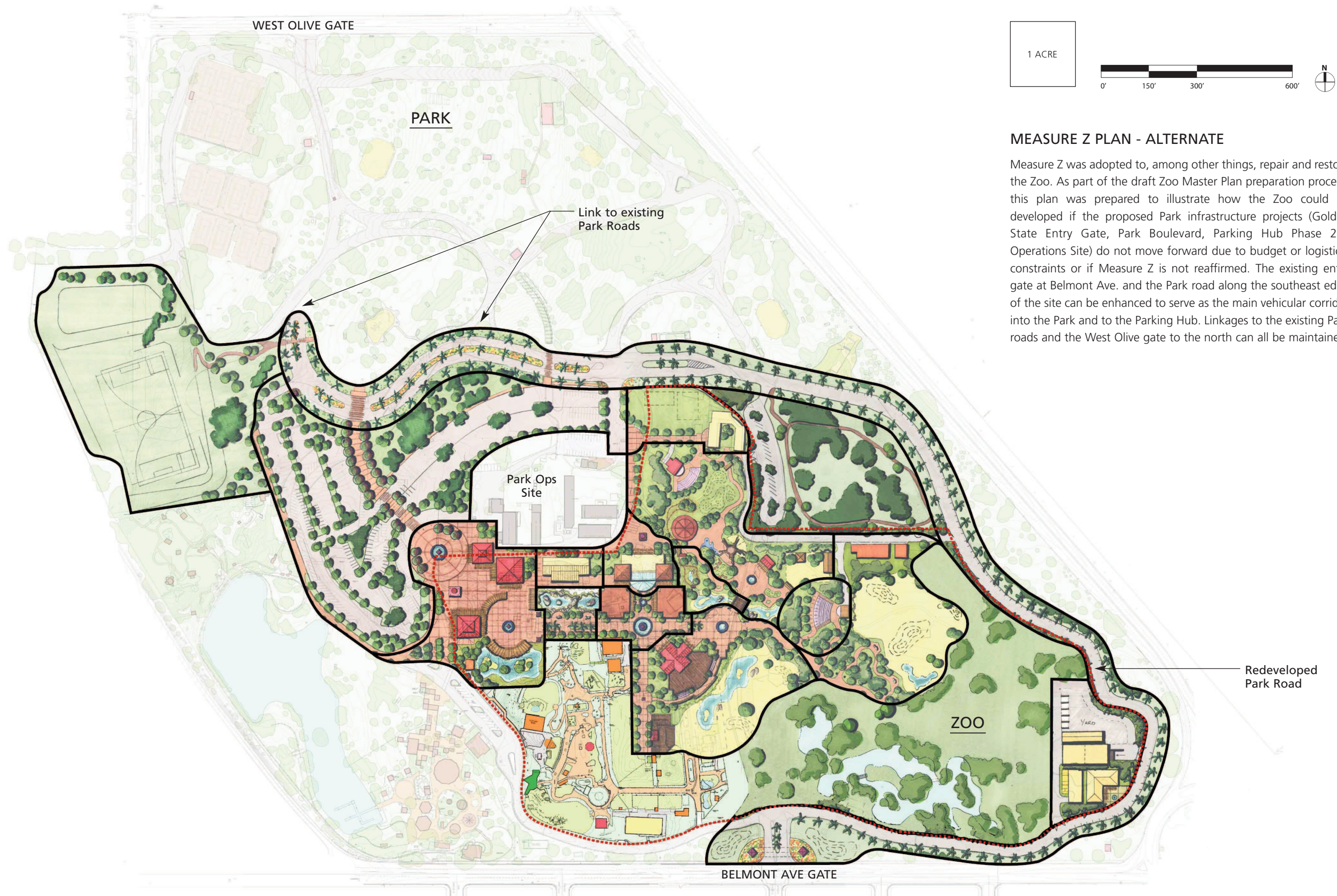


Oaxaca, Mexico



Garden at Balboa Park

Measure Z Plan Alternative through 2014



MEASURE Z PLAN - ALTERNATE

Measure Z was adopted to, among other things, repair and restore the Zoo. As part of the draft Zoo Master Plan preparation process, this plan was prepared to illustrate how the Zoo could be developed if the proposed Park infrastructure projects (Golden State Entry Gate, Park Boulevard, Parking Hub Phase 2 - Operations Site) do not move forward due to budget or logistical constraints or if Measure Z is not reaffirmed. The existing entry gate at Belmont Ave. and the Park road along the southeast edge of the site can be enhanced to serve as the main vehicular corridor into the Park and to the Parking Hub. Linkages to the existing Park roads and the West Olive gate to the north can all be maintained.

Land Use Quantities



Existing and Proposed Land Use Quantities				
Use	Summary			
	Land Area ^a			
	Proposed		Existing	
Roeding Park	100 acres	68%	123 acres	83%
Fresno Chaffee Zoo	39 acres	26%	18 acres	12%
Rotary Playland & Storyland	9 acres	6%	7 acres	5%
Totals	148 acres		148 acres	
Details				
Use	Roeding Park			
	Land Area ^a			
	Proposed		Existing	
Public Access Roads ^b	5 acres	5%	11 acres	9%
Non-Public Access Road	2 acres	2%	0 acres	0%
Multiple Purpose Paths (Pedestrian/Bike)	6 acres	6%	0 acres	0%
Parking ^b	9 acres	9%	3 acres	2%
Public Recreation/Open Space ^c	76 acres	76%	104 acres	85%
PARCS Maintenance Yard ^d	2 acres	2%	5 acres	4%
Totals	100 acres		123 acres	
Use	Fresno Chaffee Zoo			
	Land Area ^a			
	Proposed		Existing	
Non Public Access Roads	1 acre	3%	1 acre	6%
Multiple Purpose Paths (Pedestrian/Bike)	5 acres	13%	3 acres	17%
Exhibits include habitat	20 acres	51%	4 acres	22%
Buildings	3 acres	7%	2 acres	11%
Landscape/Open Space	10 acres	26%	8 acres	44%
Totals	39 acres		18 acres	
Use	Rotary Storyland and Playland			
	Land Area ^a			
	Proposed		Existing	
All	9	100%	7	100%
Totals	9		7	

^aAll acreages are rounded to the nearest whole acre.

^bPortions of the land area assigned to Roeding Park for roads and parking would be jointly used by the Park, Fresno Chaffee Zoo and Rotary Storyland and Playland.

^cLake Washington and public picnic area are included as public recreation open space.

^dThe specific land area required for the new Roeding Park maintenance yard has not been determined, but should not exceed 1 to 2 acres.

LEGEND

■■■■■ Illustrative Proposed Site Boundaries

BUILDING

- Visitor Service Facility
- Exhibit Facility
- Animal Holding & Support Facility
- Zoo Service & Operations Facility

CIRCULATION

- Primary Zoo Path & Plazas
- Entry Plazas & Promenades
- Park Plaza & Promenades
- Vehicular Circulation, Parking & Service

SITE

- Animal Exhibits
- Zoo Buffer
- Park Landscape

